

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3352891

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

A01

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 10.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	12.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	88.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	89.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.10
Rated speed rpm :	1145
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1185
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1300

LOW IDLE

control lever	
position degree :	67.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	450
rack travel mm :	4.60

Testing:

Rated speed rpm :	450
rack travel mm :	5.10
Tolerance mm :	+ 0.10
<hr/>	
rack travel mm :	2.00
Rated speed rpm :	600
Tolerance 1/min :	+ 30
<hr/>	
Rated speed rpm :	100
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	10.15
Tolerance mm :	+ 0.05
<hr/>	
Rated speed rpm :	550
rack travel mm :	10.20
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	400
rack travel mm :	10.75

Tolerance mm : ± 0.25

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.10
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449AB
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3352892-VERSA001

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 125.1

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

A04

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 10.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 92.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	12.5
Tolerance	
cm ³ /1000 strokes :	+ - 2.0
Check tolerance	
cm ³ /1000S.	: + - 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ - 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	92.5
Tolerance	
cm ³ /1000 strokes :	+ - 1.0
Check tolerance	
cm ³ /1000S.	: + - 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	86.0
tolerance degree :	+ - 4.0

RATED SPEED

rack travel mm :	9.60
Rated speed rpm :	1045
Tolerance 1/min :	+ - 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1085
Tolerance 1/min :	+ - 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ - 0.55
Rated speed rpm :	1250

LOW IDLE

control lever	
position degree :	67.0
tolerance degree :	+ - 4.0

Setting point w/out bumper spring

Rated speed rpm :	450
rack travel mm :	4.60

Testing:

Rated speed rpm :	450
rack travel mm :	5.10
Tolerance mm :	+ - 0.10
<hr/>	
rack travel mm :	2.00
Rated speed rpm :	600
Tolerance 1/min :	+ - 30
<hr/>	
Rated speed rpm :	100
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	10.65
Tolerance mm :	+ - 0.05
<hr/>	
Rated speed rpm :	500
rack travel mm :	11.85
Tolerance mm :	+ - 0.05
<hr/>	
Rated speed rpm :	700
rack travel mm :	11.45

Tolerance mm : \pm 0.05
Rated speed rpm : 850
rack travel mm : 11.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449AC
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3352893-VERSA002

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L
Power KW : 134.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

A07

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 10.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	88.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	89.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.20
Rated speed rpm :	1145
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1185
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	595
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	10.25
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	12.20
Tolerance mm :	+ 0.10

Rated speed rpm :	750
rack travel mm :	12.20

Tolerance mm : ± 0.10
Rated speed rpm : 950
rack travel mm : 11.40
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.20
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449AG
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3353251-VERSA006

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 133.2

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

A10

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 10.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	97.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	86.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.80
Rated speed rpm :	1045
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1085
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1250

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	595
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	10.85
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	11.50
Tolerance mm :	+ 0.10

Rated speed rpm :	700
rack travel mm :	11.50

Tolerance mm : \pm 0.10
Rated speed rpm : 835
rack travel mm : 11.10
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449AI

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201

Cust. part No. : 3352894-VERSA008

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 139.8

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes	: 3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 16.0
Tolerance	
cm ³ /1000 strokes	: ± 2.0
Check tolerance	
cm ³ /1000S.	: ± 4.5
Speed	
Tolerance	
cm ³ /1000 strokes	: 5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
<hr/>	
governor spring	
pre-tension	
click setting x	: 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure	
hPa	: -
Del. quantity	
cm ³ /1000 strokes	: 106.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 3.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree	: 94.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.30
Rated speed rpm	: 1295
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1340
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1500

LOW IDLE

control lever	
position degree	: 66.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 400
rack travel mm	: 5.10

Testing:

Rated speed rpm	: 400
rack travel mm	: 5.60
Tolerance mm	: ± 0.10
<hr/>	
rack travel mm	: 2.00
Rated speed rpm	: 570
Tolerance 1/min	: ± 30
<hr/>	
Rated speed rpm	: 100
CRT mm min.	: > 19.00

TORQUE CONTROL

Rated speed rpm	: 1250
rack travel mm	: 11.35
Tolerance mm	: ± 0.05
<hr/>	
Rated speed rpm	: 500
rack travel mm	: 11.40
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 400
rack travel mm	: 11.95

Tolerance mm : \pm 0.25

BREAKAWAY

Rack travel in mm : 10.30
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449BB
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3352898-VERSA011

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

A16

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 117.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 6.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	117.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever	
position degree :	90.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.00
Rated speed rpm :	1145
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1195
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	1.00
Tolerance mm :	+ 0.70
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	595
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	12.05
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	12.60
Tolerance mm :	+ 0.10

Rated speed rpm :	700
rack travel mm :	12.60

Tolerance mm : \pm 0.10
Rated speed rpm : 800
rack travel mm : 12.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 113.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 7.0
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449BC
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3353232-VERSA012

Customer spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 154.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	12.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	118.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	90.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.20
Rated speed rpm :	1145
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1200
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	67.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	450
rack travel mm :	4.60

Testing:

Rated speed rpm :	450
rack travel mm :	5.10
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	600
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	12.25
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	12.30
Tolerance mm :	+ 0.10

Rated speed rpm :	400
rack travel mm :	12.85

Tolerance mm : \pm 0.25

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449BD
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3354419-VERSA013

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 014
Outside diameter : 6.0

A22

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 11.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S. :	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	107.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	89.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.30
Rated speed rpm :	1145
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1190
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	595
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	11.35
Tolerance mm :	+ 0.05

Rated speed rpm :	700
rack travel mm :	12.90
Tolerance mm :	+ 0.10

Rated speed rpm :	900
rack travel mm :	12.20

Tolerance mm : \pm 0.10

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.30
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449CA
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3915294-VERSA020

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA 8.3 L
Power KW : 164.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test Lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 11.55
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 111.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	111.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	89.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.50
Rated speed rpm :	1145
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1195
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	595
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	11.55
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	12.20
Tolerance mm :	+ 0.10

Rated speed rpm :	750
rack travel mm :	12.20

Tolerance mm : +- 0.10
Rated speed rpm : 950
rack travel mm : 11.90
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1145
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449CI
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3354421-VERSA028

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 154.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

A28

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 11.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Spreed
 Tolerance
 cm3/1000 strokes : 3.5

Check tolerance
 cm3/1000S. : 8.0

Del. quantity
 cm3/1000 strokes : 16.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5

Spreed
 Tolerance
 cm3/1000 strokes : 5.5
 Check tolerance
 cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + 0.20

governor spring
 pre-tension
 click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : -

Del. quantity
 cm3/1000 strokes : 116.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0

Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 89.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.90
 Rated speed rpm : 1145
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1195
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 66.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 5.10

Testing:

Rated speed rpm : 400
 rack travel mm : 5.60
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 570
 Tolerance 1/min : + 30

Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 11.95
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 12.00
 Tolerance mm : + 0.10

Rated speed rpm : 400
 rack travel mm : 12.55

Tolerance mm : \pm 0.25

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449CJ
Injection pump
Pump designation : PES6A1000320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3354437-VERSA029

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L
Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

B03

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 10.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	94.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	94.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.50
Rated speed rpm :	1295
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1335
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1500

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	570
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1250
rack travel mm :	10.55
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	10.60
Tolerance mm :	+ 0.10

Rated speed rpm :	400
rack travel mm :	11.15

Tolerance mm : \pm 0.25

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449DA
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3354634-VERSA030

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 160.3

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

B06

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.85
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 11.95
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 116.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Speed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	116.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	94.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.90
Rated speed rpm :	1295
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1345
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1500

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	570
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1250
rack travel mm :	11.95
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	12.00
Tolerance mm :	+ 0.10

Rated speed rpm :	400
rack travel mm :	12.55

Tolerance mm : +- 0.25

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1295
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449DB
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3354685-VERSA031

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L
Power KW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

B09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 10.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	88.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	89.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.20
Rated speed rpm :	1145
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1185
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	570
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	10.25
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	10.30
Tolerance mm :	+ 0.10

Rated speed rpm :	400
rack travel mm :	10.85

Tolerance mm : \pm 0.25

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 72.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449DC
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201
Cust. part No. : 3354686-VERSA032

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA - 8.3 L
Power KW : 148.4

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 10.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spread	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S. :	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	97.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	89.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.80
Rated speed rpm :	1145
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1190
Tolerance 1/min :	+ 15

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	570
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	10.85
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	10.90
Tolerance mm :	+ 0.10

Rated speed rpm :	400
rack travel mm :	11.45

Tolerance mm : \pm 0.25

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 449DD

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A2C2209
: R
Governor no. : 9 420 083 201

Cust. part No. : 3354913

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L
Power KW : 129.1

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 10.25
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 88.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000s.	: 8.0
<hr/>	
Del. quantity	
cm3/1000 strokes :	16.0
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000s.	: + 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000s.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1175
Aneroid pressure	
hPa :	-
Del. quantity	
cm3/1000 strokes :	88.5
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000s.	: + 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000s.	: 8.0

CONTROL LEVER

control lever	
position degree :	91.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.20
Rated speed rpm :	1220
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1260
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1400

LOW IDLE

control lever	
position degree :	66.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.10

Testing:

Rated speed rpm :	400
rack travel mm :	5.60
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	595
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1175
rack travel mm :	10.25
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	11.40
Tolerance mm :	+ 0.10

Rated speed rpm :	800
rack travel mm :	10.80

Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 93.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.20
Rated speed rpm : 1220
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96
Test oil : ISO 4113
Combination No. : 9 400 087 459
Injection pump
Pump designation : PES6P120A720LS7181
: -10
EP type number : 0 412 726 870
Governor
Governor design. : RQ300/1050PA911-2
Governor no. : 9 420 080 313
Cust. part No. : 0160743602

Customer-spec. information
Customer : MBB
Motor : OM447 LA
Power KW : 298.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 067
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 600
Rack travel in mm : 15.40
Tolerance mm : ± 0.10
Del. quantity
cm3/1000 strokes : 280.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.00
 Tolerance mm : +- 0.20
 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : +- 3.0
 Check tolerance
 cm³/1000S. : +- 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.75
 Tolerance mm : +- 0.25
 Rated speed rpm : 1120
 guide sleeve
 travel mm : 7.45
 Tolerance mm : +- 0.25
 Rated speed rpm : 600
 guide sleeve
 travel mm : 6.00
 Tolerance mm : +- 0.10
 Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.50
 Tolerance mm : +- 0.10
 Rated speed rpm : 1160
 guide sleeve
 travel mm : 10.00
 Tolerance mm : +- 0.30

GUIDE SLEEVE POSITION

Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1050
 Del. quantity
 cm³/1000 strokes : 280.0
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 40.0
 tolerance degree : +- 4.0
 control lever
 position degree : 101.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.00
 Rated speed rpm : 1103
 Tolerance 1/min : +- 8
 rack travel mm : 4.00
 Rated speed rpm : 1160
 Tolerance 1/min : +- 15
 rack travel mm : 0.75
 Tolerance mm : +- 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : +- 4.0
 control lever
 position degree : 11.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : ± 20

Rated speed rpm : 100
CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 15.40
Tolerance mm : ± 0.10

Rated speed rpm : 1050
rack travel mm : 15.00
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 16.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 360
rack travel mm : -4.50
Tolerance mm : ± 0.10

Pressure hPa : 740
rack travel mm : -1.30
Tolerance mm : ± 0.10

Pressure hPa : 1340
rack travel mm : 0.30
Tolerance mm : ± 0.10

Pressure hPa : 1440
rack travel mm : 0.55
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 264.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 298.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 1103
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96
Test oil : ISO 4113

Combination No. : 9 400 087 460

Injection pump
Pump designation : PES6P120A720LS7114
: -13
EP type number : 0 412 726 867

Governor
Governor design. : RQ300/1050PA911-3
Governor no. : 9 420 080 314

Cust. part No. : 0140748502

Customer-spec. information
Customer : MBB
Motor : OM447 LA
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.50
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 226.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.00
 Tolerance mm : +- 0.20
 Del. quantity
 cm³/1000 strokes : 13.5
 Tolerance
 cm³/1000 strokes : +- 3.0
 Check tolerance
 cm³/1000S. : +- 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 2.75
 Tolerance mm : +- 0.15
 Rated speed rpm : 1125
 guide sleeve
 travel mm : 7.30
 Tolerance mm : +- 0.20
 Rated speed rpm : 600
 guide sleeve
 travel mm : 6.00
 Tolerance mm : +- 0.10
 Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.50
 Tolerance mm : +- 0.10
 Rated speed rpm : 1175
 guide sleeve
 travel mm : 9.45
 Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 800
 Del. quantity
 cm³/1000 strokes : 226.0
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 34.0
 tolerance degree : +- 4.0
 control lever
 position degree : 98.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.20
 Rated speed rpm : 1103
 Tolerance 1/min : +- 8
 rack travel mm : 4.00
 Rated speed rpm : 1170
 Tolerance 1/min : +- 15
 rack travel mm : 0.75
 Tolerance mm : +- 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : +- 4.0
 control lever
 position degree : 13.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : ± 20

Rated speed rpm : 100

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.50
Tolerance mm : ± 0.10

Rated speed rpm : 1050
rack travel mm : 13.20
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 14.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 240
rack travel mm : -2.80
Tolerance mm : ± 0.10

Pressure hPa : 560
rack travel mm : -0.80
Tolerance mm : ± 0.10

Pressure hPa : 920
rack travel mm : 0.25
Tolerance mm : ± 0.05

Pressure hPa : 980
rack travel mm : 0.45
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 215.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 1103
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96
Test oil : ISO 4113

Combination No. : 9 400 087 461

Injection pump
Pump designation : PES5P120A720LS7174
: -10
EP type number : 0 412 725 815

Governor
Governor design. : RQ300/1Q50PA774-6
Governor no. : 9 420 080 315

Cust. part No. : 0140748202

Customer-spec. information
Customer : MBB
Motor : OM449 A
Power kW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 194.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
 Rack travel in mm : 6.80
 Tolerance mm : +- 0.20
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : +- 3.0
 Check tolerance
 cm³/1000S. : +- 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 2.15
 Tolerance mm : +- 0.25

Rated speed rpm : 1110
 guide sleeve
 travel mm : 6.45
 Tolerance mm : +- 0.25

Rated speed rpm : 600
 guide sleeve
 travel mm : 6.00
 Tolerance mm : +- 0.10

Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.00
 Tolerance mm : +- 0.10

Rated speed rpm : 1170
 guide sleeve
 travel mm : 9.15
 Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 194.5
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 36.0
 tolerance degree : +- 4.0

control lever
 position degree : 98.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.70
 Rated speed rpm : 1103
 Tolerance i/min : +- 8

rack travel mm : 4.00
 Rated speed rpm : 1175
 Tolerance 1/min : +- 15

rack travel mm : 0.75
 Tolerance mm : +- 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : +- 4.0

control lever
 position degree : 13.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 6.80
 Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 410
Tolerance 1/min : + 20

Rated speed rpm : 100

CRT mm min. : > 10.00

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.00
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 14.70
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 14.70
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 340
rack travel mm : -2.20
Tolerance mm : + 0.10

Pressure hPa : 520
rack travel mm : -0.80
Tolerance mm : + 0.10

Pressure hPa : 960
rack travel mm : 0.25
Tolerance mm : + 0.05

Pressure hPa : 1040
rack travel mm : 0.45
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 211.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.70
Rated speed rpm : 1103
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 207.0

Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.04.96
Test oil : ISO 4113
Combination No. : 9 400 087 500
Injection pump
Pump designation : PES6P120A720LS7257
: -10
EP type number : 9 400 087 086
Governor
Governor design. : RQV300...950PA1242
Governor no. : 9 420 080 387
Cust. part No. : 0260746602

Customer-spec. information

Customer : MBB
Motor : OM 447 LA
Power KW : 264.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 21.00
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 600
Rack travel in mm : 14.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 275.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

 Del. quantity
 cm³/1000 strokes : 16.5
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1050
 guide sleeve
 travel mm : 7.80
 Tolerance mm : ± 0.10

Rated speed rpm : 700
 guide sleeve
 travel mm : 5.45
 Tolerance mm : ± 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.75
 Tolerance mm : ± 0.25

Rated speed rpm : 500
 guide sleeve
 travel mm : 3.25
 Tolerance mm : ± 0.25

Rated speed rpm : 1165
 guide sleeve
 travel mm : 9.45
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1120

 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure
 hPa : 1300
 Del. quantity
 cm³/1000 strokes : 275.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 52.0
 tolerance degree : ± 4.0

control lever
 position degree : 117.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1000
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1125
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1230

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : ± 4.0

control lever
 position degree : 17.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.50
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.20

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.25
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 13.65
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 14.25
Tolerance mm : + 0.05

Rated speed rpm : 840
rack travel mm : 13.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.25
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 760
rack travel mm : 2.25
Tolerance mm : + 0.15

Pressure hPa : 500
rack travel mm : 0.90
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 245.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 265.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1000
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 14.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113
Combination No. : 0 402 066 702
Injection pump
Pump designation : PES6P110A120RS3336
: -1
EP type number : 0 412 016 751
Governor
Governor design. : RSV550...1100P2A586
: -1
Governor no. : 0 421 833 480

Cust. part No. : 3926887

Customer-spec. information
Customer : CDC
Motor : 6CTA
Power KW : 194.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 086
Inlet press. bar : 2.0
Tolerance bar : + 0.1
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0
Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Start of delivery blocking
°NW after s.o.d. : 8.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Barrel no. : 1
Beginning of delivery difference
and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 187.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 187.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.25
Rated speed rpm : 1185
Tolerance 1/min : ± 5

rack travel mm : 8.50
Rated speed rpm : 1235
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 67.5
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.60

Testing:

Rated speed rpm : 550
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.25
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1500

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 11.10
Tolerance mm : ± 0.20

Rated speed rpm : 1000

Pressure hPa : 995
rack travel mm : 13.45
Tolerance mm : ± 0.20

Pressure hPa : 655
rack travel mm : 12.05
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 122.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 13.25
Rated speed rpm : 1185
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.03.96
Test oil : ISO 4113

Combination No. : 0 402 776 834

Injection pump
Pump designation : PES6P120A72ORS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV400...750P4A610
: -1
Governor no. : 0 421 833 520

Cust. part No. : RE66451

Customer-spec. information
Customer : DEERE
Motor : 6081 HF001
Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

C09

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.40
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 247.0
Tolerance
cm³/1000 strokes : +- 1.0

C10

Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 91.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 755
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 790
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 950

rack travel mm : 4.00
Rated speed rpm : 820

LOW IDLE

control lever
position degree : 74.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check speed 1/min : > 80

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 755
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.03.96
Test oil : ISO 4113
Combination No. : 0 402 776 835
Injection pump
Pump designation : PES6P120A72ORS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV400...750P4A607
: -1
Governor no. : 0 421 833 521

Cust. part No. : RE66458

Customer-spec. information
Customer : DEERE
Motor : 6081 HF001
Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 079
Inlet press. bar : 2.0
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery blocking
°NW after s.o.d. : 9.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1
Beginning of delivery differende
and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 91.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 755

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 790

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 950

rack travel mm : 4.00

Rated speed rpm : 820

LOW IDLE

control lever

position degree : 74.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.00

Testing:

Rated speed rpm : 400

rack travel mm : 5.50

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check speed 1/min : > 80

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 755
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96
Test oil : ISO 4113

Combination No. : 9 400 030 740

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV425...1200A0C853R
Governor no. : 9 420 034 719

Cust. part No. : 3929410

Customer-spec. information

Customer : CDC
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Del. quantity
cm³/1000 strokes : 18.5

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 101.5
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.85
Rated speed rpm : 1250
Tolerance 1/min : +- 5

rack travel mm : 4.50
Rated speed rpm : 1305
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1400

rack travel mm : 4.50
Rated speed rpm : 1310

LOW IDLE

control lever
position degree : 78.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 4.60

Testing:

Rated speed rpm : 425
rack travel mm : 5.10
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.85
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 8.70
Tolerance mm : +- 0.20

Rated speed rpm : 800

Pressure hPa : 450
rack travel mm : 10.50
Tolerance mm : +- 0.20

Pressure hPa : 275
rack travel mm : 9.50
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0

BREAKAWAY

Rack travel in mm : 9.85
Rated speed rpm : 1250
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 120.5

Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 15.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96
Test oil : ISO 4113
Combination No. : 0 400 074 873
Injection pump
Pump designation : PES4M55C32ORS184
EP type number : 0 410 054 938
Governor
Governor design. : RSF375/2000M87
Governor no. : 0 420 021 290

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3L
Power KW : 60.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 469 990 351
Inlet press. bar : 1.0
Test nozzle holde
assembly : 1 688 901 111
Opening pressure
bar : 148.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 21.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 16.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 12.70
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0
Rated speed rpm : 375
Rack travel in mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 6.5
Tolerance
cm³/1000 strokes : ± 0.5
Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

—————
IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : ± 0.25

—————
FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1100
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

—————
RATED SPEED

control lever
position degree : 50.0
rack travel mm : 9.00
Rated speed rpm : 2200
rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2500

—————
SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000
CRT mm max. : 1.45

—————
LOW IDLE

control lever
position degree : 12.5
tolerance degree : ± 2.0

Setting point w/out bumper spring
Rated speed rpm : 375
rack travel mm : 4.70

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 3.40
Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 250
CRT mm min. : > 10.20

Rated speed rpm : 1000
CRT mm max. : 1.45

rack travel mm : 4.70
Rated speed rpm : 375

—————
TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : ± 0.05

Rated speed rpm : 1500
rack travel mm : 12.30
Tolerance mm : ± 0.10

Rated speed rpm : 1950
rack travel mm : 12.20
Tolerance mm : ± 0.10

—————
ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940

rack travel mm : -0.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : ± 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : ± 0.8
Check tolerance
cm³/1000S. : ± 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1950
Spreed
Del. quantity
cm³/1000 strokes : 41.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : > 20.10
Del. quantity
cm³/1000 strokes : 59.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : ± 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

Grad : > 47.00

Grad : < 44.50

SETTING PNEUMATIC FAST IDLE (ELA)

control lever
position degree : 12.5
tolerance degree : ± 2.0

Rated speed rpm : 425

Rack travel in mm : 7.30
Tolerance mm : ± 0.80
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.5
Check tolerance
cm³/1000S. : ± 4.5
Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 12.5
tolerance degree : \pm 2.0

control lever
position degree : 50.0

ADJUSTMENT

control lever
position degree : 50.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.96
Test oil : ISO 4113
Combination No. : 0 401 878 140
Injection pump
Pump designation : PE8P120A520/5RS427
EP type number : 0 411 828 048
Governor
Governor design. : RSUV300...900POA320
: -1
Governor no. : 0 421 829 107
Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : TBD 234 V8
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 067
Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 8- 5- 4- 7
: - 2- 3- 6
Phasing : 0-30-90-120-180
: -210-270-300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 13.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 980
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1130

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.10

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : + 30

TORQUE CONTROL

Dimension a mm : 3.90
Rated speed rpm : 900
rack travel mm : 13.75
Tolerance mm : + 0.05

Rated speed rpm : 450
rack travel mm : 13.75
Tolerance mm : + 0.05

Rated speed rpm : 280
rack travel mm : 15.20

Tolerance mm : \pm 0.30

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 945
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96
Test oil : ISO 4113
Combination No. : 0 402 046 878
Injection pump
Pump designation : PES6P120A720RS3370
EP type number : 0 412 026 790
Governor
Governor design. : RQV300...1100PA1284K
Governor no. : 0 421 815 517

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8360.46.4106
Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 034
Inlet press. bar : 2.5
Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 4.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 13.50
Tolerance mm : + 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50
Start of delivery mark
Check
tolerance °NW : + 0.40
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.80
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 7.90
Tolerance mm : +- 0.20

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.68
Tolerance mm : +- 0.20

Rated speed rpm : 1155
guide sleeve
travel mm : 9.00
Tolerance mm : +- 0.15

Rated speed rpm : 385
guide sleeve
travel mm : 3.01
Tolerance mm : +- 0.25

Rated speed rpm : 1450

guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1325

Rack travel in mm : 10.00
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1145
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 300
CRT mm min. : > 8.30
Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.80
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 13.95
Tolerance mm : ± 0.15

Rated speed rpm : 650
rack travel mm : 13.50
Tolerance mm : ± 0.15

Rated speed rpm : 400
rack travel mm : 13.00
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1200
rack travel mm : 13.95
Tolerance mm : ± 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 10.95
Tolerance mm : ± 0.20

Rated speed rpm : 800

Pressure hPa : 550
rack travel mm : 12.90
Tolerance mm : ± 0.20

Pressure hPa : 285
rack travel mm : 11.55
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 180
Rated speed rpm : < 220

Check
speed 1/min : > 160
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 187.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 84.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.90
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000s. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.04.96
Test oil : ISO 4113
Combination No. : 0 402 046 879
Injection pump
Pump designation : PES6P120A320RS3284B
EP type number : 0 412 026 795
Governor
Governor design. : RQ275/1050PA999-3B
Governor no. : 0 421 801 809
Cust. part No. : 5119B

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 062045_I/3B
Power KW : 173.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 071
Inlet press. bar : 2.5
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

001

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 11.55
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
Rated speed rpm :	275
<hr/>	
Rack travel in mm :	-6.40
Tolerance mm :	+ 0.20
Del. quantity	
cm ³ /1000 strokes :	18.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 5.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

<hr/>	
GUIDE SLEEVE TRAVEL	
Rated speed rpm :	275
guide sleeve	
travel mm :	1.30
Tolerance mm :	+ 0.20
<hr/>	
Rated speed rpm :	1141
guide sleeve	
travel mm :	6.40
Tolerance mm :	+ 0.15
<hr/>	
Rated speed rpm :	1050
guide sleeve	
travel mm :	6.00
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	369
guide sleeve	
travel mm :	3.61
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	490
guide sleeve	
travel mm :	6.00
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	1340
guide sleeve	
travel mm :	11.50
Tolerance mm :	+ 0.50

<hr/>	
GUIDE SLEEVE POSITION	
Rated speed rpm :	600
Rack travel in mm :	20.00
Tolerance mm :	+ 0.80
<hr/>	

<hr/>	
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm :	700
Aneroid pressure	
hPa :	1000
Del. quantity	
cm ³ /1000 strokes :	165.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.0
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	

<hr/>	
CONTROL LEVER	
control lever	
position degree :	270.0
tolerance degree :	+ 4.0
<hr/>	
RATED SPEED	
rack travel mm :	-1.00
Rated speed rpm :	1122
Tolerance 1/min :	+ 8
<hr/>	
rack travel mm :	-7.50
Rated speed rpm :	1225
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	-11.00
Tolerance mm :	+ 0.55
Rated speed rpm :	1350
<hr/>	

<hr/>	
LOW IDLE	
control lever	
position degree :	252.0
tolerance degree :	+ 4.0
<hr/>	

Testing:

Rated speed rpm : 275
rack travel mm : -6.40
Tolerance mm : + 0.10

rack travel mm : -9.50
Rated speed rpm : 338
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm max. : < -5.00

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.35
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 280
rack travel mm : -0.55
Tolerance mm : + 0.20

Pressure hPa : 200
rack travel mm : -1.05
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1122
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -6.40
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.04.96
Test oil : ISO 4113

Combination No. : 0 402 640 844

Injection pump
Pump designation : PE12P120A520LS7879
EP type number : 0 412 620 841

Governor
Governor design. : RQV350...1200PA1167
Governor no. : 0 421 814 107

Cust. part No. : 0250742402

Customer-spec. information
Customer : MTU
Motor : 12V183-03
Power KW : 845.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1,3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 150
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8
 : - 3- 4- 11- 10
 : - 2- 6- 7

Phasing : 0-45-60-105-120
 : -165-180-225-240
 : -285-300-345
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.80
Tolerance mm : ± 0.10

Del. quantity cm³/1000 strokes : 310.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.00
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 15.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.53
Tolerance mm : ± 0.15

Rated speed rpm : 1281
guide sleeve
travel mm : 8.53
Tolerance mm : ± 0.20

Rated speed rpm : 990
guide sleeve
travel mm : 5.68
Tolerance mm : ± 0.25

Rated speed rpm : 420
guide sleeve
travel mm : 2.86
Tolerance mm : ± 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.42

D06

Tolerance mm : ± 0.25

Rated speed rpm : 620
guide sleeve
travel mm : 3.89
Tolerance mm : ± 0.25

Rated speed rpm : 1366
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1310

Rack travel in mm : 12.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 310.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1470

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : $>$ 6.30
Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 9.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 2000
rack travel mm : 12.70
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 5.90
Tolerance mm : \pm 0.15

Rated speed rpm : 600

Pressure hPa : 600
rack travel mm : 9.20

D07

Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 6.80
Tolerance mm : \pm 0.10

Pressure hPa : 1600
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Pressure hPa : 1200
rack travel mm : 10.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 240
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 220
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 267.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 360.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.00
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113
Combination No. : 0 402 648 790

Injection pump
Pump designation : PE8P130A920/5LS7867
EP type number : 0 412 638 805

Governor
Governor design. : RQV400...1000PA1285
Governor no. : 0 421 814 177

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8285.22.014
Power KW : 277.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet temp. °C : 43
Tolerance °C : ± 2.5

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

D09

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 8- 4- 3- 6
 : - 5- 7- 2

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes : 188.0

Tolerance cm3/1000 strokes : ± 1.0

Check tolerance cm3/1000S. : ± 4.0

Speed Tolerance cm3/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

 Rated speed rpm : 400

 Rack travel in mm : 4.30
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 7.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
 guide sleeve
 travel mm : 1.90
 Tolerance mm : + 0.20

 Rated speed rpm : 1080
 guide sleeve
 travel mm : 8.57
 Tolerance mm : + 0.15

 Rated speed rpm : 764
 guide sleeve
 travel mm : 5.74
 Tolerance mm : + 0.25

 Rated speed rpm : 520
 guide sleeve
 travel mm : 3.66
 Tolerance mm : + 0.25

 Rated speed rpm : 1320
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1220

 Rack travel in mm : 8.00
 Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 188.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 114.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.20
 Rated speed rpm : 1070
 Tolerance 1/min : + 5

 rack travel mm : 4.00
 Rated speed rpm : 1155
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 400
 rack travel mm : 4.30
 Tolerance mm : + 0.10

 Rated speed rpm : 300

 CRT mm min. : > 5.80

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 10.25
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 10.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.25
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.40
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 9.60
Tolerance mm : ± 0.10

Pressure hPa : 355
rack travel mm : 10.05
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.20
Rated speed rpm : 1070
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 7.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113
Combination No. : 0 402 795 204
Injection pump
Pump designation : PES5H120/720/3LS1004
: -1
EP type number : 0 412 725 204
Governor
Governor design. : RE33
Governor no. : 0 421 890 364
Cust. part No. : 51.111103-7538

Customer-spec. information
Customer : MAN
Motor : D 2865 LF 09
Power kW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 4-unten
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 082
Inlet press. bar : 3.0
Tolerance bar : + 0.1
Overflow quantity
min. l/h : 165
Tolerance l/h : + 10.0
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5

D13

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 10.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 0.50
Firing order : 1- 3- 5- 4- 2
Phasing : 0-72-144-216-288
Tolerance : + 0.30
Check
tolerance °NW : + 0.50
Start of delivery blocking
Barrel no. : 5

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
 CRT mm : 13.00
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
 CRT mm : 6.15
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
 CRT mm : 12.50
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
 CRT mm : 5.50
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
 deenergised adjusting magnet
 and control rod in
 stop position.

CRT mm : 0.75
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
 H and M pumps)

Test with control rod
 in stop position

Engine speed min-1: 60
 Amplitude V : 1.4
 Tolerance V : +/- 0.6
 Check tolerance V : +/- 1.20

Engine speed min-1: 600
 Difference Amplitude to
 Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
 Uact V : 3.350
 Prestroke solenoid Stroke mm : 10.00
 Del. quantity cm³/1000 strokes : 332.0
 Tolerance cm³/1000 strokes : +/- 1.0
 Check tolerance cm³/1000s. : +/- 4.0
 Spreed Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000s. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
 Uact V : 1.450
 Prestroke solenoid Stroke mm : 10.00
 Del. quantity cm³/1000 strokes : 72.0
 Tolerance cm³/1000 strokes : +/- 4.0
 Check tolerance cm³/1000s. : +/- 8.0
 Spreed Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000s. : 8.0

Rated speed rpm : 1000
 Uact V : 3.290
 Prestroke solenoid Stroke mm : 8.00
 Del. quantity cm³/1000 strokes : 311.0

Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

Rated speed rpm : 500
Uact V : 2.900
Prestroke solenoid
Stroke mm : 9.20
Del. quantity
cm³/1000 strokes : 303.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000S. : +- 9.0

Rated speed rpm : 500
Uact V : 2.100
Prestroke solenoid
Stroke mm : 6.20
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : +- 0.060
Check tolerance
Volt : +- 0.080
Prestroke solenoid
Stroke mm : 7.20
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : +- 3.0
Speed
Tolerance
cm³/1000 strokes : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.450
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113
Combination No. : 0 402 795 205

Injection pump
Pump designation : PES5H120/720/3LS1002
: -2
EP type number : 0 412 725 205

Governor
Governor design. : RE33
Governor no. : 0 421 890 362

Cust. part No. : 51.111103-7540

Customer-spec. information
Customer : MAN
Motor : D 2865 LUH 07
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 4-unten

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 165
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

D16

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 10.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
 CRT mm : 13.00
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
 CRT mm : 6.15
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
 CRT mm : 12.50
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
 CRT mm : 5.50
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
 deenergised adjusting magnet
 and control rod in
 stop position.
 CRT mm : 0.75
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
 H and M pumps)

Test with control rod
 in stop position

Engine speed min-1: 60
 Amplitude V : 1.4
 Tolerance V : +/- 0.6
 Check tolerance V : +/- 1.20

Engine speed min-1: 600
 Difference
 Amplitude to
 Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
 Uact V : 3.350
 Prestroke solenoid
 Stroke mm : 10.00
 Del. quantity
 cm³/1000 strokes : 332.0
 Tolerance
 cm³/1000 strokes : +/- 1.0
 Check tolerance
 cm³/1000S. : +/- 4.0
 Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
 Uact V : 1.450
 Prestroke solenoid
 Stroke mm : 10.00
 Del. quantity
 cm³/1000 strokes : 72.0
 Tolerance
 cm³/1000 strokes : +/- 4.0
 Check tolerance
 cm³/1000S. : +/- 8.0
 Speed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0

Rated speed rpm : 1000
 Uact V : 3.290
 Prestroke solenoid
 Stroke mm : 8.00
 Del. quantity
 cm³/1000 strokes : 311.0

Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

Rated speed rpm : 500
Uact V : 2.900
Prestroke solenoid
Stroke mm : 9.20
Del. quantity
cm³/1000 strokes : 303.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000S. : +- 9.0

Rated speed rpm : 500
Uact V : 2.100
Prestroke solenoid
Stroke mm : 6.20
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : +- 0.060
Check tolerance
Volt : +- 0.080
Prestroke solenoid
Stroke mm : 7.20
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.450
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113

Combination No. : 0 402 795 803

Injection pump
Pump designation : PES5P120A720/3LS7418
EP type number : 0 412 725 824

Governor
Governor design. : RE30
Governor no. : 0 421 890 039

Cust. part No. : 51.11103-7511

Customer-spec. information
Customer : MAN
Motor : D 2865 LF 24
Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00

Rack travel in mm : 13.00
Tolerance mm : ± 0.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 5

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 3.100
Del. quantity
cm³/1000 strokes : 271.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0

Rated speed rpm : 750
Uact V : 1.470
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : +/- 5.0
Check tolerance
cm³/1000S. : +/- 9.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500
Uact V : 1.950
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 8.0

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.470
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.080
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Speed
Tolerance
cm³/1000 strokes : ± 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113
Combination No. : 0 402 796 039
Injection pump
Pump designation : PES6H110/32ORS13-1
EP type number : 0 412 716 004

Governor
Governor design. : RE36
Governor no. : 0 421 890 363

Cust. part No. : 51.11103-7529

Customer-spec. information
Customer : MAN
Motor : D0826 LF13/LFL09
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3-unten

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 165
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 8.00
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
 CRT mm : 13.00
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
 CRT mm : 6.15
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
 CRT mm : 12.50
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
 CRT mm : 5.50
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
 deenergised adjusting magnet
 and control rod in
 stop position.

CRT mm : 0.75
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
 H and M pumps)

Test with control rod
 in stop position

Engine speed min-1: 60
 Amplitude V : 1.4
 Tolerance V : +/- 0.6
 Check tolerance V : +/- 1.20

Engine speed min-1: 600
 Difference
 Amplitude to
 Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 850
 Uact V : 2.490
 Prestroke solenoid
 Stroke mm : 11.10
 Del. quantity
 cm³/1000 strokes : 231.0
 Tolerance
 cm³/1000 strokes : +/- 1.0
 Check tolerance
 cm³/1000S. : +/- 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
 Uact V : 1.580
 Prestroke solenoid
 Stroke mm : 7.70
 Del. quantity
 cm³/1000 strokes : 92.0
 Tolerance
 cm³/1000 strokes : +/- 4.0
 Check tolerance
 cm³/1000S. : +/- 8.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.0

Rated speed rpm : 1150
 Uact V : 2.440
 Prestroke solenoid
 Stroke mm : 9.30
 Del. quantity
 cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : +- 6.0
Check tolerance
cm³/1000s. : +- 10.0

Rated speed rpm : 600
Uact V : 2.220
Prestroke solenoid
Stroke mm : 12.10
Del. quantity
cm³/1000 strokes : 211.0
Tolerance
cm³/1000 strokes : +- 6.0
Check tolerance
cm³/1000s. : +- 10.0

Rated speed rpm : 500
Uact V : 1.750
Prestroke solenoid
Stroke mm : 9.80
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000s. : +- 9.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.650
Tolerance Volt : +- 0.060
Check tolerance
Volt : +- 0.080
Prestroke solenoid
Stroke mm : 11.10
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.050
Prestroke solenoid
Stroke mm : 5.50
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000s. : +- 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113
Combination No. : 0 402 796 040
Injection pump
Pump designation : PES6H120/32ORS10-1
EP type number : 0 412 726 009

Governor
Governor design. : RE36
Governor no. : 0 421 890 363

Cust. part No. : 51.11103-7537

Customer-spec. information
Customer : MAN
Motor : D 0826 LUH 12
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3-unten

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 160
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 8.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
 CRT mm : 13.00
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
 CRT mm : 6.15
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
 CRT mm : 12.50
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
 CRT mm : 5.50
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
 deenergised adjusting magnet
 and control rod in
 stop position.

CRT mm : 0.75
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
 H and M pumps)

Test with control rod
 in stop position

Engine speed min-1: 60
 Amplitude V : 1.4
 Tolerance V : +/- 0.6
 Check tolerance V : +/- 1.20

Engine speed min-1: 600
 Difference
 Amplitude to
 Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 800
 Uact V : 2.510
 Prestroke solenoid
 Stroke mm : 13.20
 Del. quantity
 cm³/1000 strokes : 222.0
 Tolerance
 cm³/1000 strokes : +/- 1.0
 Check tolerance
 cm³/1000S. : +/- 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
 Uact V : 1.400
 Prestroke solenoid
 Stroke mm : 12.00
 Del. quantity
 cm³/1000 strokes : 60.0
 Tolerance
 cm³/1000 strokes : +/- 4.0
 Check tolerance
 cm³/1000S. : +/- 8.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.0

Rated speed rpm : 1200
 Uact V : 2.540
 Prestroke solenoid
 Stroke mm : 10.30
 Del. quantity
 cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : ± 6.0
Check tolerance
cm³/1000S. : ± 10.0

Rated speed rpm : 500
Uact V : 1.930
Prestroke solenoid
Stroke mm : 10.40
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 8.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.440
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.080
Prestroke solenoid
Stroke mm : 8.80
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.100
Prestroke solenoid
Stroke mm : 7.20
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : ± 6.0
Check tolerance
cm³/1000S. : ± 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113

Combination No. : 0 402 796 204

Injection pump
Pump designation : PES6H120/720/3LS1005
: -1
EP type number : 0 412 726 204

Governor
Governor design. : RE33
Governor no. : 0 421 890 364

Cust. part No. : 51.111103-7539

Customer-spec. information
Customer : MAN
Motor : D 2866 LF 16
Power KW : 294.0

TEST BENCH REQUIREMENTS

Inlet line : 4-unten

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 135
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

D28

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 10.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 6

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
 CRT mm : 13.00
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
 CRT mm : 6.15
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
 CRT mm : 12.50
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
 CRT mm : 5.50
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
 deenergised adjusting magnet
 and control rod in
 stop position.

CRT mm : 0.75
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
 H and M pumps)

Test with control rod
 in stop position

Engine speed min-1: 60
 Amplitude V : 1.4
 Tolerance V : +/- 0.6
 Check tolerance V : +/- 1.20

Engine speed min-1: 600
 Difference Amplitude to
 Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
 Uact V : 3.350
 Prestroke solenoid Stroke mm : 10.00
 Del. quantity cm³/1000 strokes : 332.0
 Tolerance cm³/1000 strokes : +/- 1.0
 Check tolerance cm³/1000S. : +/- 4.0
 Spreed Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
 Uact V : 1.450
 Prestroke solenoid Stroke mm : 10.00
 Del. quantity cm³/1000 strokes : 74.0
 Tolerance cm³/1000 strokes : +/- 4.0
 Check tolerance cm³/1000S. : +/- 8.0
 Spreed Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 8.0
 Rated speed rpm : 1000
 Uact V : 3.290
 Prestroke solenoid Stroke mm : 8.00
 Del. quantity cm³/1000 strokes : 314.0

Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

Rated speed rpm : 500
Uact V : 2.900
Prestroke solenoid
Stroke mm : 9.20
Del. quantity
cm³/1000 strokes : 307.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000S. : +- 9.0

Rated speed rpm : 500
Uact V : 2.100
Prestroke solenoid
Stroke mm : 6.20
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : +- 0.060
Check tolerance
Volt : +- 0.080
Prestroke solenoid
Stroke mm : 7.20
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.450
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113

Combination No. : 0 402 796 205

Injection pump
Pump designation : PES6H120/720/3LS1006
: -1

EP type number : 0 412 726 205

Governor
Governor design. : RE33
Governor no. : 0 421 890 365

Cust. part No. : 51.111103-7541

Customer-spec. information
Customer : MAN
Motor : D 2866 LUH 21
Power KW : 257.0

TEST BENCH REQUIREMENTS

Inlet line : 4-unten

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 135
Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

E03

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 10.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery blocking

Barrel no. : 6

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
 CRT mm : 13.00
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
 CRT mm : 6.15
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
 CRT mm : 12.50
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
 CRT mm : 5.50
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with deenergised adjusting magnet and control rod in stop position.
 CRT mm : 0.75
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60
 Amplitude V : 1.4
 Tolerance V : +/- 0.6
 Check tolerance V : +/- 1.20

Engine speed min-1: 600
 Difference Amplitude to Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
 Uact V : 3.350
 Prestroke solenoid Stroke mm : 10.00
 Del. quantity cm³/1000 strokes : 332.0
 Tolerance cm³/1000 strokes : +/- 1.0
 Check tolerance cm³/1000s. : +/- 4.0
 Spreed Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000s. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
 Uact V : 1.450
 Prestroke solenoid Stroke mm : 10.00
 Del. quantity cm³/1000 strokes : 74.0
 Tolerance cm³/1000 strokes : +/- 4.0
 Check tolerance cm³/1000s. : +/- 8.0
 Spreed Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000s. : 8.0

Rated speed rpm : 1000
 Uact V : 3.290
 Prestroke solenoid Stroke mm : 8.00
 Del. quantity cm³/1000 strokes : 314.0

Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 8.0

Rated speed rpm : 500
Uact V : 2.900
Prestroke solenoid
Stroke mm : 9.20
Del. quantity
cm³/1000 strokes : 307.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 9.0

Rated speed rpm : 500
Uact V : 2.100
Prestroke solenoid
Stroke mm : 6.20
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 8.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.080
Prestroke solenoid
Stroke mm : 7.20
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.450
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96
Test oil : ISO 4113

Combination No. : 0 402 796 822

Injection pump
Pump designation : PES6P120A720/3LS7417
EP type number : 0 412 726 960

Governor
Governor design. : RE30
Governor no. : 0 421 890 039

Cust. part No. : 51.11103-7480

Customer-spec. information

Customer : MAN
Motor : D 2866 LOH 25
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

E06

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.45

Prestroke mm : 5.45
Tolerance mm : ± 0.05
Tolerance mm : ± 0.05

Check
tolerance mm : ± 0.10

Check
tolerance mm : ± 0.10

Rack travel in mm : 15.50

Rack travel in mm : 15.50
Tolerance mm : ± 0.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Barrel no. : 6

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 3.100
Del. quantity
cm³/1000 strokes : 271.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0

Rated speed rpm : 750
Uact V : 1.470
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : +/- 5.0
Check tolerance
cm³/1000S. : +/- 9.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500
Uact V : 1.950
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.470
Tolerance Volt : +- 0.060
Check tolerance
Volt : +- 0.06u
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : +- 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96
Test oil : ISO 4113
Combination No. : 0 403 244 055
Injection pump
Pump designation : PES4MW100/320RS1521
EP type number : 0 413 204 020
Governor
Governor design. : RQV400...1200MW147
: -1
Governor no. : 0 420 083 336
Cust. part No. : 51.11103-7532

Customer-spec. information

Customer : MAN
Motor : D0824 LFL04
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 8.0

E09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.56
Tolerance mm : ± 0.20

Rated speed rpm : 1263
guide sleeve
travel mm : 9.98
Tolerance mm : ± 0.15

Rated speed rpm : 868
guide sleeve
travel mm : 5.72
Tolerance mm : ± 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.27
Tolerance mm : ± 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 10.00

E10

Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1253
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1335

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 300

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.30
Tolerance mm : ± 0.05

Rated speed rpm : 1200
rack travel mm : 12.30
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : ± 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.30
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 1.80
Tolerance mm : ± 0.10

Pressure hPa : 130
rack travel mm : 0.30
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 800
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1253
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 083 454
Injection pump
Pump designation : PES6A100D32D/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...900A7C2209
: -1R
Governor no. : 9 420 083 232
Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

E13

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 129.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000S.	: 8.0
<hr/>	
Del. quantity	
cm3/1000 strokes :	18.5
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S.	: + 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
Aneroid pressure	
hPa :	-
Del. quantity	
cm3/1000 strokes :	129.5
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S.	: + 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	108.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	943
rack travel mm :	11.70
<hr/>	
Rated speed rpm :	979
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	944
rack travel mm :	11.70
<hr/>	
Rated speed rpm :	980
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	945
rack travel mm :	11.70
<hr/>	
Rated speed rpm :	981
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	946
rack travel mm :	11.70
<hr/>	
Rated speed rpm :	982
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	947
rack travel mm :	11.70
<hr/>	
Rated speed rpm :	983
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85

Tolerance mm : +- 0.55
Rated speed rpm : 1100

Rated speed rpm : 948
rack travel mm : 11.70

Rated speed rpm : 984
Tolerance 1/min : +- 2
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.75
Tolerance mm : +- 0.05

Rated speed rpm : 550
rack travel mm : 12.80
Tolerance mm : +- 0.10

Rated speed rpm : 400
rack travel mm : 14.30
Tolerance mm : +- 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 083 454DF
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...900A7C2209
: -1R
Governor no. : 9 420 083 232
Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3

TEST BENCH REQUIREMENTS

Inlet Line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 101.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 6.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	18.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	101.5
Tolerance	
cm ³ /1000 strokes :	+ 0.5
Check tolerance	
cm ³ /1000S.	: + 2.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever	
position degree :	107.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	943
rack travel mm :	10.10
<hr/>	
Rated speed rpm :	972
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1150
<hr/>	
Rated speed rpm :	944
rack travel mm :	10.10
<hr/>	
Rated speed rpm :	973
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1150
<hr/>	
Rated speed rpm :	945
rack travel mm :	10.10
<hr/>	
Rated speed rpm :	974
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1150
<hr/>	
Rated speed rpm :	946
rack travel mm :	10.10
<hr/>	
Rated speed rpm :	975
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1150
<hr/>	
Rated speed rpm :	947
rack travel mm :	10.10
<hr/>	
Rated speed rpm :	976
Tolerance 1/min :	+ 2
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85

Tolerance mm : +- 0.55
 Rated speed rpm : 1150

 Rated speed rpm : 948
 rack travel mm : 10.10

 Rated speed rpm : 977
 Tolerance 1/min : +- 2
 rack travel mm : 4.00

 rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1150

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : +- 4.0

 Setting point w/out bumper spring

 Rated speed rpm : 400
 rack travel mm : 5.50

 Testing:

 Rated speed rpm : 400
 rack travel mm : 6.00
 Tolerance mm : +- 0.10

 rack travel mm : 2.00
 Rated speed rpm : 445
 Tolerance 1/min : +- 30

 Rated speed rpm : 100

 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 11.15
 Tolerance mm : +- 0.05

 Rated speed rpm : 550
 rack travel mm : 11.20
 Tolerance mm : +- 0.10

 Rated speed rpm : 400
 rack travel mm : 12.60
 Tolerance mm : +- 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.00
 Tolerance mm : +- 1.00
 Del. quantity
 cm3/1000 strokes : 142.0
 Tolerance
 cm3/1000 strokes : +- 7.0
 Check tolerance
 cm3/1000S. : +- 10.0

LOW IDLE

Del. quantity
 cm3/1000 strokes : 18.5
 Tolerance
 cm3/1000 strokes : +- 2.0
 Check tolerance
 cm3/1000S. : +- 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 083 454DG
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...900A7C2209
: -1R
Governor no. : 9 420 083 232

Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 12.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 129.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 2.5

<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 6.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	18.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	129.5
Tolerance	
cm ³ /1000 strokes :	+ 0.5
Check tolerance	
cm ³ /1000S.	: + 2.5
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever	
position degree :	108.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	943
rack travel mm :	11.70

Rated speed rpm :	979
Tolerance 1/min :	+ 2
rack travel mm :	4.00

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100

Rated speed rpm :	944
rack travel mm :	11.70

Rated speed rpm :	980
Tolerance 1/min :	+ 2
rack travel mm :	4.00

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100

Rated speed rpm :	945
rack travel mm :	11.70

Rated speed rpm :	981
Tolerance 1/min :	+ 2
rack travel mm :	4.00

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100

Rated speed rpm :	946
rack travel mm :	11.70

Rated speed rpm :	982
Tolerance 1/min :	+ 2
rack travel mm :	4.00

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100

Rated speed rpm :	947
rack travel mm :	11.70

Rated speed rpm :	983
Tolerance 1/min :	+ 2
rack travel mm :	4.00

rack travel mm :	0.85
------------------	------

Tolerance mm : \pm 0.55
Rated speed rpm : 1100

Rated speed rpm : 948
rack travel mm : 11.70

Rated speed rpm : 984
Tolerance 1/min : \pm 2
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.50

Testing:

Rated speed rpm : 400
rack travel mm : 6.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 14.30
Tolerance mm : \pm 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 7.0
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 083 454ED
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...900A7C2209
: -1R
Governor no. : 9 420 083 232
Cust. part No. : 3355522-VERSA043

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 720
Rack travel in mm : 13.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 720

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 142.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 765
rack travel mm : 12.20

Rated speed rpm : 802
Tolerance 1/min : ± 2
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 900

Rated speed rpm : 766
rack travel mm : 12.20

Rated speed rpm : 803
Tolerance 1/min : ± 2
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 900

Rated speed rpm : 767
rack travel mm : 12.20

Rated speed rpm : 804
Tolerance 1/min : ± 2
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 900

Rated speed rpm : 768
rack travel mm : 12.20

Rated speed rpm : 805
Tolerance 1/min : ± 2
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 900

Rated speed rpm : 769
rack travel mm : 12.20

Rated speed rpm : 806
Tolerance 1/min : ± 2
rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55
Rated speed rpm : 770
rack travel mm : 12.20
Rated speed rpm : 807
Tolerance 1/min : \pm 2
rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.00

Testing:

Rated speed rpm : 400
rack travel mm : 4.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : \pm 30

Rated speed rpm : 100
CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 720
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 13.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 14.90
Tolerance mm : \pm 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.03.96
Test oil : ISO 4113
Combination No. : 9 400 083 458
Injection pump
Pump designation : PES6A100D320/3RS2691
: -2
EP type number : 9 410 230 028
Governor
Governor design. : RQV350...1100AB1218
: -1R
Governor no. : 9 420 080 302
Cust. part No. : 3354617

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT
Power KW : 156.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1150
guide sleeve
travel mm : 7.00
Tolerance mm : ± 0.10

Rated speed rpm : 1400
guide sleeve
travel mm : 8.95
Tolerance mm : ± 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.65
Tolerance mm : ± 0.25

Rated speed rpm : 650
guide sleeve
travel mm : 4.45
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1315

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

control lever
position degree : 111.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1160
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

control lever
position degree : 16.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.90
Tolerance mm : ± 0.10

Rated speed rpm : 100
 CRT mm min. : > 9.00
 Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 12.65
 Tolerance mm : + 0.05
 Rated speed rpm : 700
 rack travel mm : 13.65
 Tolerance mm : + 0.05
 Rated speed rpm : 800
 rack travel mm : 13.40
 Tolerance mm : + 0.10
 Rated speed rpm : 950
 rack travel mm : 12.95
 Tolerance mm : + 0.15

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 800
 rack travel mm : 13.65
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 11.95
 Tolerance mm : + 0.15
 Rated speed rpm : 500
 Pressure hPa : 500
 rack travel mm : 12.30
 Tolerance mm : + 0.10
 Pressure hPa : 600
 rack travel mm : 13.25
 Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 270

Check speed 1/min : > 80
 Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 800
 Rated speed rpm : 700
 Del. quantity cm³/1000 strokes : 133.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.0

Aneroid pressure hPa : 800
 Rated speed rpm : 800
 Del. quantity cm³/1000 strokes : 130.5
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.0

Aneroid pressure hPa : -
 Rated speed rpm : 500
 Del. quantity cm³/1000 strokes : 94.5
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 11.60
 Rated speed rpm : 1160
 Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.00
 Tolerance mm : + 1.00
 Del. quantity cm³/1000 strokes : 170.0
 Tolerance cm³/1000 strokes : + 8.0
 Check tolerance cm³/1000S. : + 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 083 458EA
Injection pump
Pump designation : PES6A100D320/3RS2691
: -2
EP type number : 9 410 230 028
Governor
Governor design. : RQV350...1100AB1218
: -1R
Governor no. : 9 420 080 302
Cust. part No. : 3354950-VERSA040

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014

F01

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 102.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : + 3.0

 Spreed
 Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 8.0

 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1150
 guide sleeve
 travel mm : 7.00
 Tolerance mm : + 0.10

 Rated speed rpm : 1400
 guide sleeve
 travel mm : 8.95
 Tolerance mm : + 0.25

 Rated speed rpm : 350
 guide sleeve
 travel mm : 1.65
 Tolerance mm : + 0.25

 Rated speed rpm : 650
 guide sleeve
 travel mm : 4.45
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1315

 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 600
 Del. quantity
 cm³/1000 strokes : 102.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 55.0
 tolerance degree : + 4.0

 control lever
 position degree : 111.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70
 Rated speed rpm : 1160
 Tolerance 1/min : + 5

 rack travel mm : 4.00
 Rated speed rpm : 1335
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

 control lever
 position degree : 15.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 5.90
 Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 9.00
Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 870
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 11.75
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 600
rack travel mm : 12.05
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : ± 0.15

Rated speed rpm : 500

Pressure hPa : 430
rack travel mm : 11.50
Tolerance mm : ± 0.10

Pressure hPa : 340
rack travel mm : 10.65
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 600
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 102.0
Tolerance cm³/1000 strokes : ± 2.0
Check tolerance cm³/1000S. : ± 4.0

Aneroid pressure hPa : 600
Rated speed rpm : 870
Del. quantity cm³/1000 strokes : 104.0
Tolerance cm³/1000 strokes : ± 2.0
Check tolerance cm³/1000S. : ± 4.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 67.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.70
Rated speed rpm : 1160
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity cm³/1000 strokes : 170.0
Tolerance cm³/1000 strokes : ± 8.0
Check tolerance cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 083 459
Injection pump
Pump designation : PES6A95D120RS2822
EP type number : 9 400 084 029
Governor
Governor design. : RQV350...1250AB1235
: -2R
Governor no. : 9 420 080 311
Cust. part No. : 3355394

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 119.3

TEST BENCH REQUIREMENTS

Inlet Line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

F05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.80
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 12.75
Tolerance mm : +- 0.05
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000S. :	8.0
<hr/>	
Del. quantity	
cm3/1000 strokes :	17.0
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S. :	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1300
guide sleeve	
travel mm :	6.85
Tolerance mm :	+ 0.05

Rated speed rpm :	1550
guide sleeve	
travel mm :	8.55
Tolerance mm :	+ 0.25

Rated speed rpm :	350
guide sleeve	
travel mm :	1.45
Tolerance mm :	+ 0.25

Rated speed rpm :	700
guide sleeve	
travel mm :	4.25
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1530
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
-------------------	------

Aneroid pressure	
hPa :	600
Del. quantity	
cm3/1000 strokes :	87.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	56.0
tolerance degree :	+ 4.0

control lever	
position degree :	111.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.70
Rated speed rpm :	1315
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1560
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1750

LOW IDLE

control lever	
position degree :	69.0
tolerance degree :	+ 4.0

control lever	
position degree :	14.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	350
rack travel mm :	6.00
Tolerance mm :	+ 0.10

Rated speed rpm :	100
-------------------	-----

CRT mm min. : > 8.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.75
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 600
rack travel mm : 12.75
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 410
rack travel mm : 0.70
Tolerance mm : + 0.10

Pressure hPa : 320
rack travel mm : 0.15
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 600
Rated speed rpm : 700

F07

Del. quantity
cm³/1000 strokes : 81.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1315
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : + 8.0
Check tolerance
cm³/1000S. : + 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 083 459FA

Injection pump
Pump designation : PES6A95D120RS2822
EP type number : 9 400 084 029

Governor
Governor design. : RQV350...1250AB1235
: -2R
Governor no. : 9 420 080 311

Cust. part No. : 3356014-VERSA0-50

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 128.7

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

F09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 96.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000S.	: 8.0
<hr/>	
Del. quantity	
cm3/1000 strokes :	18.5
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S.	: + 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1300
guide sleeve	
travel mm :	6.85
Tolerance mm :	+ 0.05
<hr/>	
Rated speed rpm :	1550
guide sleeve	
travel mm :	8.55
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	350
guide sleeve	
travel mm :	1.45
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	700
guide sleeve	
travel mm :	4.25
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1530
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1300
-------------------	------

Aneroid pressure	
hPa :	800
Del. quantity	
cm3/1000 strokes :	96.5
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S.	: + 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	57.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	112.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	12.70
Rated speed rpm :	1345
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1580
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1800

LOW IDLE

control lever	
position degree :	69.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	13.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	350
rack travel mm :	6.20
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	100

CRT mm min. : > 8.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.75
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 13.75
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 13.75
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 540
rack travel mm : 1.55
Tolerance mm : ± 0.15

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80

Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 224
Injection pump
Pump designation : PES6A90D320RS2605
EP type number : 9 400 083 078
Governor
Governor design. : RSV350...1050A1C2029
: -2R
Governor no. : 9 420 083 266
Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : TD 229-6

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1050
Rack travel in mm : 8.25
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 53.5
Tolerance
cm3/1000 strokes : ± 0.5
Check tolerance
cm3/1000S. : ± 2.5

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 7.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	9.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	4.5
Check tolerance	
cm ³ /1000S.	: 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	6.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1050
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	53.5
Tolerance	
cm ³ /1000 strokes :	+ 0.5
Check tolerance	
cm ³ /1000S.	: + 2.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.0
Check tolerance	
cm ³ /1000S.	: 7.0

CONTROL LEVER

control lever	
position degree :	62.0
tolerance degree :	+ 4.0

control lever	
position degree :	112.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	7.20
Rated speed rpm :	1075
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1105
Tolerance 1/min :	+ 15

rack travel mm :	1.00
Tolerance mm :	+ 0.70
Rated speed rpm :	1250

LOW IDLE

control lever	
position degree :	83.0
tolerance degree :	+ 4.0

control lever	
position degree :	33.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	350
rack travel mm :	6.00

Testing:

Rated speed rpm :	350
rack travel mm :	6.50
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	555
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1050
rack travel mm :	8.25

Tolerance mm : \pm 0.05
Rated speed rpm : 500
rack travel mm : 9.05
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 9.00
Tolerance mm : \pm 0.10

Rated speed rpm : 875
rack travel mm : 8.55
Tolerance mm : \pm 0.15

Del. quantity
cm³/1000 strokes : 9.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000s. : 7.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 52.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.5

BREAKAWAY

Rack travel in mm : 7.20
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

F15

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 239
Injection pump
Pump designation : PES6A90D320RS2701
EP type number : 9 400 083 094
Governor
Governor design. : RSV350...1150A2C2097
 : -1R
Governor no. : 9 420 083 267
Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : TD229-6
Power KW : 106.7

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 10.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 81.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 81.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1200
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 10.85
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 11.45
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.25

Tolerance mm : \pm 0.05
Rated speed rpm : 850
rack travel mm : 11.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1200
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 243
Injection pump
Pump designation : PES4A80D32ORS1282-1
EP type number : 9 400 083 097

Governor
Governor design. : RS350/1500A2C2073
: -2R
Governor no. : 9 420 083 269

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D 229-4

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 9.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 58.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : + 2.0

Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Del. quantity
cm³/1000 strokes : 9.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 3.5

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

F20

control lever
position degree : 117.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.20
Rated speed rpm : 1585
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1640
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1800

LOW IDLE

control lever
position degree : 60.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : + 0.10

rack travel mm : 4.00
Rated speed rpm : 460
Tolerance 1/min : + 30

Rated speed rpm : 250

CRT mm min. : > 6.80

Rated speed rpm : 550

CRT mm max. : < 3.20

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 9.25
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 10.65
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 10.30
Tolerance mm : + 0.10

Rated speed rpm : 1200
rack travel mm : 9.65
Tolerance mm : \pm 0.15

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 6.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 59.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 64.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 8.20
Rated speed rpm : 1585
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Del. quantity
cm³/1000 strokes : 9.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.5
Spreed

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.95
Test oil : ISO 4113
Combination No. : 9 400 085 254
Injection pump
Pump designation : PES6A90D410RS2293
EP type number : 0 410 896 031
Governor
Governor design. : RSV500...900A0B2211
: -1L
Governor no. : 9 420 083 204
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 352 (A)

TEST BENCH REQUIREMENTS

Inlet line : 2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 000
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 880
Rack travel in mm : 10.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 57.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 5.0

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 57.5
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0

CONTROL LEVER

control lever
 position degree : 87.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.00
 Rated speed rpm : 908

Tolerance 1/min : ± 3
 rack travel mm : 4.00
 Rated speed rpm : 953
 Tolerance 1/min : ± 3
 rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1100

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
 rack travel mm : 6.00

Testing:

Rated speed rpm : 500
 rack travel mm : 6.50
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 565
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 880
 rack travel mm : 10.05
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 rack travel mm : 10.10
 Tolerance mm : ± 0.10

Rated speed rpm : 400
 rack travel mm : 11.50
 Tolerance mm : ± 0.10

BREAKAWAY

Rack travel in mm : 9.00
Rated speed rpm : 908
Tolerance 1/min : \pm 3

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.50
Tolerance mm : \pm 0.30

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 255
Injection pump
Pump designation : PES5A80D410RS2526
EP type number : 9 400 093 007
Governor
Governor design. : RS325/1400AQC2212L
Governor no. : 9 420 083 295
Cust. part No. :

Customer-spec. information
Customer : DEUTZ ARGENTINA
Motor : F5L913

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0
x inside diameter : 2.0

F25

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 5- 4- 2
Phasing : 0-72-144-216-288

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 11.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.65
Tolerance mm : +- 0.35
governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : +- 0.5
Check tolerance
cm³/1000S. : +- 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 1445
Tolerance 1/min : +- 5
rack travel mm : 4.00

Rated speed rpm : 1515
Tolerance 1/min : +- 15
rack travel mm : 1.00
Tolerance mm : +- 0.70
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 70.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : +- 0.10

rack travel mm : 6.00
Rated speed rpm : 420
Tolerance 1/min : +- 30

Rated speed rpm : 280

CRT mm min. : > 8.80

Rated speed rpm : 550

CRT mm max. : < 4.40

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 11.55
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 12.25
Tolerance mm : +- 0.05

Rated speed rpm : 1100
rack travel mm : 11.95
Tolerance mm : +- 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 56.5

Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 3.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1445
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
 Test oil : ISO 4113
 Combination No. : 9 400 085 301
 Injection pump
 Pump designation : PES6A85D410RS2415
 EP type number : 0 410 886 907
 Governor
 Governor design. : RQV350...1325AB1234
 : -1L
 Governor no. : 9 420 080 259
 Cust. part No. :

Customer-spec. information
 Customer : DEUTZ-ARGENTINA
 Motor : BF 6L 913
 Power KW : 116.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
 Test oil inlet
 temp. °C : 40
 Tolerance °C : ± 2.0
 Overflow valve : 1 417 413 047
 Inlet press. bar : 1.5
 Test nozzle holde
 assembly : 0 681 343 009
 Opening pressure
 bar : 173.5
 Tolerance bar : ± 1.5
 Test Lines : 1 680 750 014
 Outside diameter : 6.0

x inside diameter : 2.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 32.0
 Tolerance bar : ± 1.0
 Prestroke mm : 1.95
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10
 Rack travel in mm : 10.50
 Tolerance mm : ± 1.50
 Firing order : 1- 5- 3- 6- 2-
 : 4
 Phasing : 0-60-120-180-240
 : -300

BASIC SETTING

Rated speed rpm : 1325
 Rack travel in mm : 11.15
 Tolerance mm : ± 0.05
 Del. quantity
 cm³/1000 strokes : 77.5
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000s. : ± 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000s. : 7.0

Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1400
 guide sleeve
 travel mm : 8.90
 Tolerance mm : ± 0.10

Rated speed rpm : 900
 guide sleeve
 travel mm : 4.95
 Tolerance mm : ± 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.75
 Tolerance mm : ± 0.25

Rated speed rpm : 600
 guide sleeve
 travel mm : 2.85
 Tolerance mm : ± 0.25

Rated speed rpm : 1200
 guide sleeve
 travel mm : 6.95
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1325
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 77.5
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 61.0
 tolerance degree : ± 4.0

control lever
 position degree : 116.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1370
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1470
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : ± 4.0

control lever
 position degree : 15.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 8.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1325
rack travel mm : 11.15
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 12.35
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : + 0.15

Rated speed rpm : 1100
rack travel mm : 11.60
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 300

Check speed 1/min : > 80
Check speed 1/min : < 320

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 75.0
Tolerance cm³/1000 strokes : + 1.5
Check tolerance cm³/1000s. : + 3.5

Aneroid pressure hPa : -
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 79.0
Tolerance cm³/1000 strokes : + 1.5
Check tolerance cm³/1000s. : + 3.5

Aneroid pressure hPa : -
Rated speed rpm : 1100

G02

Del. quantity cm³/1000 strokes : 77.5
Tolerance cm³/1000 strokes : + 1.5
Check tolerance cm³/1000s. : + 3.5

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1370
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00

LOW IDLE

Del. quantity cm³/1000 strokes : 16.0
Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000s. : + 4.0
Speed Tolerance cm³/1000 strokes : 4.5
Check tolerance cm³/1000s. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 302
Injection pump
Pump designation : PES6A90D32ORS2767
EP type number : 9 400 084 017
Governor
Governor design. : RSV300...1400A0C2207
 : -2R
Governor no. : 9 420 083 299
Cust. part No. : 905200569079

Customer-spec. information

Customer : MWM
Motor : TBD 229-6 EC
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

G03

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.55
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 14.35
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 120.5
Tolerance
cm3/1000 strokes : +- 0.5
Check tolerance
cm3/1000S. : +- 2.5

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 7.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	15.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Speed	
Tolerance	
cm ³ /1000 strokes :	4.5
Check tolerance	
cm ³ /1000S.	: 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1400
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	120.5
Tolerance	
cm ³ /1000 strokes :	+ 0.5
Check tolerance	
cm ³ /1000S.	: + 2.5
Speed	
Tolerance	
cm ³ /1000 strokes :	3.0
Check tolerance	
cm ³ /1000S.	: 7.0

CONTROL LEVER

control lever	
position degree :	116.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	13.30
Rated speed rpm :	1445
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1555
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1700

LOW IDLE

control lever	
position degree :	80.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	300
rack travel mm :	7.50

Testing:

Rated speed rpm :	300
rack travel mm :	8.00
Tolerance mm :	+ 0.10
<hr/>	
rack travel mm :	2.00
Rated speed rpm :	485
Tolerance 1/min :	+ 30
<hr/>	
Rated speed rpm :	100
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1400
rack travel mm :	14.35
Tolerance mm :	+ 0.05
<hr/>	
Rated speed rpm :	500
rack travel mm :	14.40
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	350
rack travel mm :	15.80

Tolerance mm : \pm 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 13.30
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 306
Injection pump
Pump designation : PES6A90D410RS2596
EP type number : 0 410 896 073
Governor
Governor design. : RQV300...1400AB1066
: -7L
Governor no. : 9 420 080 267
Cust. part No. : 0180742402

Customer-spec. information

Customer : MBB
Motor : OM352A
Power KW : 121.4

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

G06

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 12.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : +- 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : +- 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : +- 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 78.0
 Tolerance
 cm³/1000 strokes : +- 0.5
 Check tolerance
 cm³/1000S. : +- 2.5

G07

Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 64.0
 tolerance degree : +- 4.0

control lever
 position degree : 114.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50
 Rated speed rpm : 1445
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1590
 Tolerance 1/min : +- 20

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1750

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : +- 4.0

control lever
 position degree : 21.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 9.00
 Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 10.30

Rated speed rpm : 620

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 12.45
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 13.25
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.25
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : 375
rack travel mm : 12.60
Tolerance mm : ± 0.10

Pressure hPa : 465
rack travel mm : 12.95
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.5

Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : 700
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 307
Injection pump
Pump designation : PES4A95D41DRS2774
EP type number : 9 400 084 019
Governor
Governor design. : RQV300...1300AB1228
: -1L
Governor no. : 9 420 080 268
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 364 A
Power KW : 85.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

G10

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 3.25
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 10.65
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 91.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 10.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : ± 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 91.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 59.0
 tolerance degree : ± 4.0

control lever
 position degree : 108.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.60
 Rated speed rpm : 1365
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1490
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

control lever
 position degree : 19.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100
 CRT mm min. : > 8.00

Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1300

rack travel mm : 10.65
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.05
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 10.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.05
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 280
rack travel mm : 0.45
Tolerance mm : ± 0.05

Pressure hPa : 410
rack travel mm : 1.40
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1365
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 84.0
Tolerance
cm³/1000 strokes : ± 6.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 311
Injection pump
Pump designation : PES6A90D32ORS2718
EP type number : 9 400 084 003
Governor
Governor design. : RSV350...1250A0C1108
Governor no. : 9 420 083 272
Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : TD 229 EC-06
Power KW : 121.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.75
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 10.85
Tolerance mm : ± 0.05
Del. quantity cm3/1000 strokes : 89.0
Tolerance cm3/1000 strokes : ± 0.5
Check tolerance cm3/1000S. : ± 2.5

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes	: 3.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 7.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 11.0
Tolerance	
cm ³ /1000 strokes	: +- 2.0
Check tolerance	
cm ³ /1000S.	: +- 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 4.5
Check tolerance	
cm ³ /1000S.	: 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: +- 0.35
governor spring	
pre-tension	
click setting x	: 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1200
Aneroid pressure	
hPa	: -
Del. quantity	
cm ³ /1000 strokes	: 89.0
Tolerance	
cm ³ /1000 strokes	: +- 0.5
Check tolerance	
cm ³ /1000S.	: +- 2.5
Spreed	
Tolerance	
cm ³ /1000 strokes	: 3.0
Check tolerance	
cm ³ /1000S.	: 7.0

CONTROL LEVER

control lever	
position degree	: 109.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 9.80
Rated speed rpm	: 1295
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1375
Tolerance 1/min	: +- 15

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1450

LOW IDLE

control lever	
position degree	: 79.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 350
rack travel mm	: 4.70

Testing:

Rated speed rpm	: 350
rack travel mm	: 5.20
Tolerance mm	: +- 0.10

rack travel mm	: 2.00
Rated speed rpm	: 425
Tolerance 1/min	: +- 30

Rated speed rpm	: 100
-----------------	-------

CRT mm min.	: > 19.00
-------------	-----------

TORQUE CONTROL

Rated speed rpm	: 1200
rack travel mm	: 10.85
Tolerance mm	: +- 0.05

Rated speed rpm	: 500
rack travel mm	: 10.90
Tolerance mm	: +- 0.10

Rated speed rpm	: 400
rack travel mm	: 12.30

Tolerance mm : \pm 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 327
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RSV350...1250A0C1150
 : -4L
Governor no. : 9 420 083 256
Cust. part No. :

Customer-spec. information

Customer : MBB
Motor : OM 366 A
Power KW : 121.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

G16

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 9.65
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 82.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 82.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 103.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.60
 Rated speed rpm : 1295

Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1340
 Tolerance 1/min : ± 15
 rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 6.30

Testing:

Rated speed rpm : 350
 rack travel mm : 6.80
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 450
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 9.65
 Tolerance mm : ± 0.05

Rated speed rpm : 800
 rack travel mm : 9.65
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 rack travel mm : 9.70
 Tolerance mm : ± 0.10

Rated speed rpm : 400
 rack travel mm : 11.10
 Tolerance mm : ± 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 8.60
Rated speed rpm : 1295
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113

Combination No. : 9 400 085 329

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Governor
Governor design. : RQV300...1300AB1256L
Governor no. : 9 420 080 297

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 006

Inlet press. bar : 1.5

Test nozzle holder assembly : 0 681 343 009

Opening pressure bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 99.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000s. : ± 3.0

Speed Tolerance cm³/1000 strokes : 3.5

Check tolerance cm³/1000s. : 6.0

Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : ± 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 99.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : ± 4.0

control lever
 position degree : 118.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1365
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1505
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

control lever
 position degree : 16.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100
 CRT mm min. : > 8.00

Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.55
Tolerance mm : ± 0.15

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 10.00
Tolerance mm : ± 0.10

Pressure hPa : 450
rack travel mm : 10.65
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 60.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1365
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 84.0
Tolerance
cm³/1000 strokes : ± 6.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 334
Injection pump
Pump designation : PES6A100D320/3RS2691
: -2
EP type number : 9 410 230 028
Governor
Governor design. : RQV350...1100AB1218
: -2R
Governor no. : 9 420 080 304
Cust. part No. : 3352552

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA - 8.3 L
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test Lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.85
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 13.65
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 128.5
Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
 cm³/1000S. : + 3.0

 Spreed
 Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 8.0

 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100
 guide sleeve
 travel mm : 8.45
 Tolerance mm : + 0.05

 Rated speed rpm : 800
 guide sleeve
 travel mm : 5.75
 Tolerance mm : + 0.15

 Rated speed rpm : 350
 guide sleeve
 travel mm : 2.40
 Tolerance mm : + 0.20

 Rated speed rpm : 500
 guide sleeve
 travel mm : 4.05
 Tolerance mm : + 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 128.5
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 63.0
 tolerance degree : + 4.0

 control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1145
 Tolerance 1/min : + 5

 rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1400

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : + 4.0

 control lever
 position degree : 17.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 6.00
 Tolerance mm : + 0.10

 Rated speed rpm : 100

 CRT mm min. : > 9.00

 Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.45
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : ± 0.10

Rated speed rpm : 1000
rack travel mm : 13.90
Tolerance mm : ± 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.45
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : 640
rack travel mm : 13.85
Tolerance mm : ± 0.15

Pressure hPa : 440
rack travel mm : 12.10
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : 900
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 137.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 339
Injection pump
Pump designation : PES4A95D410RS2774
EP type number : 9 400 084 019
Governor
Governor design. : RQV300...1300AB1066
: -11L
Governor no. : 9 420 080 309
Cust. part No. : 0200742602

Customer-spec. information
Customer : MBB
Motor : OM 364 LA
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test Lines : 1 680 750 015
Outside diameter : 6.0

G26

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 3.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.55
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 103.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 9.5
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1350
 guide sleeve
 travel mm : 8.20
 Tolerance mm : ± 0.10

Rated speed rpm : 1000
 guide sleeve
 travel mm : 5.75
 Tolerance mm : ± 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 700
 guide sleeve
 travel mm : 4.25
 Tolerance mm : ± 0.25

Rated speed rpm : 1450
 guide sleeve
 travel mm : 9.15
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1395
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 800
 Del. quantity
 cm³/1000 strokes : 103.0

Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 63.0
 tolerance degree : ± 4.0

control lever
 position degree : 112.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.50
 Rated speed rpm : 1360
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1630

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

control lever
 position degree : 20.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 525

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 11.95
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 11.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 1.55
Tolerance mm : \pm 0.15

Pressure hPa : 380
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 250

Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 270

FUEL DELIVERY CHARACTERISTICS

G28

Aneroid pressure
hPa : 800
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1360
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 9.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 340
Injection pump
Pump designation : PES6A95D410RS2795
EP type number : 9 400 084 020
Governor
Governor design. : RSV350...1250A0C1150
: -5L
Governor no. : 9 420 083 258
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366
Power KW : 94.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

H02

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 3.25
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 8.65
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 63.5
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 63.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 110.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 7.60
 Rated speed rpm : 1295

H03

Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1347
 Tolerance 1/min : ± 15
 rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 6.50

Testing:

Rated speed rpm : 350
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 475
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 8.65
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 rack travel mm : 8.70
 Tolerance mm : ± 0.10

Rated speed rpm : 400
 rack travel mm : 10.10
 Tolerance mm : ± 0.30

BREAKAWAY

Rack travel in mm : 7.60
Rated speed rpm : 1295
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 101.5
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 341
Injection pump
Pump designation : PES4A95D41ORS2805
EP type number : 9 400 084 026
Governor
Governor design. : RSV350...1300A0C1150
: -6L
Governor no. : 9 420 083 257
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 364
Power KW : 60.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

H05

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 9.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 59.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 9.0
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : +- 0.35
 governor spring
 pre-tension
 click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 59.5
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 8.40
 Rated speed rpm : 1345
 Tolerance 1/min : +- 5

H06

rack travel mm : 4.00
 Rated speed rpm : 1405
 Tolerance 1/min : +- 15
 rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 7.00

Testing:

Rated speed rpm : 350
 rack travel mm : 7.50
 Tolerance mm : +- 0.10

rack travel mm : 2.00
 Rated speed rpm : 500
 Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 9.45
 Tolerance mm : +- 0.05

Rated speed rpm : 500
 rack travel mm : 9.50
 Tolerance mm : +- 0.10

Rated speed rpm : 400
 rack travel mm : 10.90
 Tolerance mm : +- 0.30

BREAKAWAY

Rack travel in mm : 8.40
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000s. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 9.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 351
Injection pump
Pump designation : PES6A95D41DRS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1066
: -13L
Governor no. : 9 420 080 332
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 015
Outside diameter : 6.0

H08

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000s. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : ± 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 104.0
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000s. : ± 2.5

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000s. : 8.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : ± 4.0

control lever
 position degree : 109.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.60
 Rated speed rpm : 1360
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1505
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

control lever
 position degree : 19.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.45
Tolerance mm : +- 0.05

Rated speed rpm : 800
rack travel mm : 11.45
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.45
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 0.40
Tolerance mm : +- 0.10

Pressure hPa : 560
rack travel mm : 1.35
Tolerance mm : +- 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 94.5
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 76.5
Tolerance
cm3/1000 strokes : +- 7.5
Check tolerance
cm3/1000S. : +- 10.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.5
Speed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113

Combination No. : 9 400 085 355

Injection pump
Pump designation : PES6A100D120RS2841
EP type number : 9 400 084 033

Governor
Governor design. : RQV350...1400AB1272R
Governor no. : 9 420 080 344

Cust. part No. : 3355313

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT 140
Power KW : 105.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 81.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	6.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	7.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1400
guide sleeve	
travel mm :	6.50
Tolerance mm :	+ 0.10

Rated speed rpm :	1000
guide sleeve	
travel mm :	4.95
Tolerance mm :	+ 0.25

Rated speed rpm :	350
guide sleeve	
travel mm :	1.95
Tolerance mm :	+ 0.25

Rated speed rpm :	600
guide sleeve	
travel mm :	3.95
Tolerance mm :	+ 0.25

Rated speed rpm :	1650
guide sleeve	
travel mm :	7.75
Tolerance mm :	+ 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1400
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	81.0

Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	6.0

CONTROL LEVER

control lever	
position degree :	51.0
tolerance degree :	+ 4.0

control lever	
position degree :	106.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	7.80
Rated speed rpm :	1473
Tolerance 1/min :	+ 8

rack travel mm :	4.00
Rated speed rpm :	1635
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1800

LOW IDLE

control lever	
position degree :	71.0
tolerance degree :	+ 4.0

control lever	
position degree :	16.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	350
rack travel mm :	4.90
Tolerance mm :	+ 0.10

Rated speed rpm :	100
CRT mm min. :	> 9.00

Rated speed rpm :	450
-------------------	-----

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 8.85
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 8.85
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 7.80
Rated speed rpm : 1473
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : ± 7.0
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 7.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 356
Injection pump
Pump designation : PES6A85D410RS2756
EP type number : 9 400 093 006
Governor
Governor design. : RSV325...1150A1C1165
: L
Governor no. : 9 420 083 290
Cust. part No. :

Customer-spec. information
Customer : DEUTZ ARG.
Motor : BF6L913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 32.0
Tolerance bar : ± 1.0
Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 11.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 73.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 73.0
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 114.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.30
 Rated speed rpm : 1195

Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1235
 Tolerance 1/min : ± 15
 rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1380

LOW IDLE

control lever
 position degree : 77.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 7.50

Testing:

Rated speed rpm : 325
 rack travel mm : 8.00
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 570
 Tolerance 1/min : ± 30

Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1150
 rack travel mm : 11.35
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 rack travel mm : 13.05
 Tolerance mm : ± 0.05

Rated speed rpm : 800
 rack travel mm : 12.35
 Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 79.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

BREAKAWAY

Rack travel in mm : 10.30
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 364
Injection pump
Pump designation : PES6A100D12ORS2849
EP type number : 9 400 084 035
Governor
Governor design. : RSV450...900A1C2270R
Governor no. : 9 420 083 294
Cust. part No. : 3355362

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 124.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

H17

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 10.35
Tolerance mm : ± 0.05
Del. quantity cm³/1000 strokes : 119.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000s. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	23.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	850
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	119.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	93.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	915
rack travel mm :	9.30
<hr/>	
Rated speed rpm :	944
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1000
<hr/>	
Rated speed rpm :	916
rack travel mm :	9.30
<hr/>	
Rated speed rpm :	945
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1000
<hr/>	
Rated speed rpm :	917
rack travel mm :	9.30
<hr/>	
Rated speed rpm :	946
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1000
<hr/>	
Rated speed rpm :	918
rack travel mm :	9.30
<hr/>	
Rated speed rpm :	947
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1000
<hr/>	
Rated speed rpm :	919
rack travel mm :	9.30
<hr/>	
Rated speed rpm :	948
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85

Tolerance mm : \pm 0.55
Rated speed rpm : 1000

Rated speed rpm : 920
rack travel mm : 9.30

Rated speed rpm : 949
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1000

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.10

Testing:

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 10.40
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.60
Tolerance mm : \pm 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000s. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 364DJ
Injection pump
Pump designation : PES6A100D120RS2849
EP type number : 9 400 084 035
Governor
Governor design. : RSV450...900A1C227DR
Governor no. : 9 420 083 294
Cust. part No. : 3355363-VERSA039

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

H2O

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.80
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 870
Rack travel in mm : 8.95
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 95.5
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 870
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 95.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 915
rack travel mm : 7.90

Rated speed rpm : 936
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1000

Rated speed rpm : 916
rack travel mm : 7.90

Rated speed rpm : 937
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1000

Rated speed rpm : 917
rack travel mm : 7.90

Rated speed rpm : 938
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1000

Rated speed rpm : 918
rack travel mm : 7.90

Rated speed rpm : 939
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1000

Rated speed rpm : 919
rack travel mm : 7.90

Rated speed rpm : 940
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : + 0.55
Rated speed rpm : 1000

Rated speed rpm : 920
rack travel mm : 7.90

Rated speed rpm : 941
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1000

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.10

Testing:

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 870
rack travel mm : 8.95
Tolerance mm : + 0.05

Rated speed rpm : 550
rack travel mm : 9.00
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 10.70
Tolerance mm : + 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : + 8.0
Check tolerance
cm³/1000S. : + 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 364EH
Injection pump
Pump designation : PES6A100D120RS2849
EP type number : 9 400 084 035
Governor
Governor design. : RSV450...900A1C2270R
Governor no. : 9 420 083 294
Cust. part No. : 3355525-VERSA047

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 85.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 8.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 92.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 92.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 87.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 762
rack travel mm : 7.30

Rated speed rpm : 781
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 763
rack travel mm : 7.30

Rated speed rpm : 782
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 764
rack travel mm : 7.30

Rated speed rpm : 783
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 765
rack travel mm : 7.30

Rated speed rpm : 784
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 766
rack travel mm : 7.30

Rated speed rpm : 785
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 767
rack travel mm : 7.30

Rated speed rpm : 786
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.10

Testing:

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 8.35
Tolerance mm : + 0.05

Rated speed rpm : 550
rack travel mm : 8.40
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 10.00
Tolerance mm : + 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 169.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000S. : + 11.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.5
Speed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 364EI

Injection pump
Pump designation : PES6A100D120RS2849
EP type number : 9 400 084 035

Governor
Governor design. : RSV450...900A1C2270R
Governor no. : 9 420 083 294

Cust. part No. : 3355524-VERSA048

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 105.8

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder assembly : 0 681 343 009

Opening pressure bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

H26

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference and maximum rack travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 123.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000S.	: 8.0
<hr/>	
Del. quantity	
cm3/1000 strokes :	23.0
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S.	: + 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	700
Aneroid pressure	
hPa :	-
Del. quantity	
cm3/1000 strokes :	123.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S.	: + 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	87.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	755
rack travel mm :	9.20
<hr/>	
Rated speed rpm :	786
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	756
rack travel mm :	9.20
<hr/>	
Rated speed rpm :	787
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	757
rack travel mm :	9.20
<hr/>	
Rated speed rpm :	788
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	758
rack travel mm :	9.20
<hr/>	
Rated speed rpm :	789
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	759
rack travel mm :	9.20
<hr/>	
Rated speed rpm :	790
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85

Tolerance mm : \pm 0.55
Rated speed rpm : 900

Rated speed rpm : 760
rack travel mm : 9.20

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 900

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.10

Testing:

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.20
Tolerance mm : \pm 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 365
Injection pump
Pump designation : PES6A90D410RS2823
EP type number : 0 410 896 093
Governor
Governor design. : RQV300...1350AB1278L
Governor no. : 9 420 080 359
Cust. part No. : 98455951

Customer-spec. information
Customer : FIAT ARGENTINA
Motor : 8.060.25.600
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.80
Tolerance mm : + 0.05
Check tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1350
Rack travel in mm : 11.55
Tolerance mm : + 0.05
Del. quantity cm3/1000 strokes : 82.0
Tolerance cm3/1000 strokes : + 0.5
Check tolerance cm3/1000S. : + 2.5
Speed Tolerance cm3/1000 strokes : 3.0
Check tolerance cm3/1000S. : 7.0

Del. quantity
 cm³/1000 strokes : 10.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.25
 Tolerance mm : ± 0.25

Rated speed rpm : 1015
 guide sleeve
 travel mm : 6.05
 Tolerance mm : ± 0.25

Rated speed rpm : 460
 guide sleeve
 travel mm : 2.45
 Tolerance mm : ± 0.25

Rated speed rpm : 640
 guide sleeve
 travel mm : 3.45
 Tolerance mm : ± 0.25

Rated speed rpm : 1390
 guide sleeve
 travel mm : 8.45
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1480
 Rack travel in mm : 12.20
 Tolerance mm : ± 1.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1350
 Aneroid pressure
 hPa : 800

Del. quantity
 cm³/1000 strokes : 82.0
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 116.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.50
 Rated speed rpm : 1395
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1530
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.60
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 8.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1350
 rack travel mm : 11.55

Tolerance mm : + 0.05
 Rated speed rpm : 500
 rack travel mm : 12.55
 Tolerance mm : + 0.05
 Rated speed rpm : 800
 rack travel mm : 12.10
 Tolerance mm : + 0.10
 Rated speed rpm : 900
 rack travel mm : 11.70
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 800
 rack travel mm : 12.55
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 10.40
 Tolerance mm : + 0.10
 Rated speed rpm : 500
 Pressure hPa : 520
 rack travel mm : 12.10
 Tolerance mm : + 0.10
 Pressure hPa : 400
 rack travel mm : 10.75
 Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 220
 Check speed 1/min : > 80
 Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 800
 Rated speed rpm : 800

Del. quantity cm3/1000 strokes : 81.5
 Tolerance cm3/1000 strokes : + 1.5
 Check tolerance cm3/1000S. : + 3.5
 Aneroid pressure hPa : -
 Rated speed rpm : 500
 Del. quantity cm3/1000 strokes : 50.0
 Tolerance cm3/1000 strokes : + 0.5
 Check tolerance cm3/1000S. : + 2.5

BREAKAWAY

Rack travel in mm : 10.50
 Rated speed rpm : 1395
 Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.00
 Tolerance mm : + 1.00
 Del. quantity cm3/1000 strokes : 156.0
 Tolerance cm3/1000 strokes : + 8.0
 Check tolerance cm3/1000S. : + 11.0

LOW IDLE

Del. quantity cm3/1000 strokes : 10.0
 Tolerance cm3/1000 strokes : + 2.0
 Check tolerance cm3/1000S. : + 4.0
 Spread Tolerance cm3/1000 strokes : 4.5
 Check tolerance cm3/1000S. : 7.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 367
Injection pump
Pump designation : PES6A95D410RS2812
EP type number : 9 400 084 028
Governor
Governor design. : RQV350...1250AB1280L
Governor no. : 9 420 080 365
Cust. part No. : 9.0520.05.6.9505

Customer-spec. information
Customer : MWM
Motor : 6.10 T
Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

J05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.80
Tolerance mm : + 0.05
Check tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference
and maximum rack travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 12.05
Tolerance mm : + 0.05
Del. quantity cm³/1000 strokes : 96.5
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1350
guide sleeve	
travel mm :	7.20
Tolerance mm :	+ 0.10

Rated speed rpm :	800
guide sleeve	
travel mm :	3.95
Tolerance mm :	+ 0.25

Rated speed rpm :	300
guide sleeve	
travel mm :	1.05
Tolerance mm :	+ 0.25

Rated speed rpm :	550
guide sleeve	
travel mm :	2.75
Tolerance mm :	+ 0.25

Rated speed rpm :	1500
guide sleeve	
travel mm :	8.55
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1490
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
Aneroid pressure	
hPa :	900
Del. quantity	
cm ³ /1000 strokes :	96.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	55.0
tolerance degree :	+ 4.0

control lever	
position degree :	110.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.00
Rated speed rpm :	1318
Tolerance 1/min :	+ 8

rack travel mm :	4.00
Rated speed rpm :	1480
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1650

LOW IDLE

control lever	
position degree :	69.0
tolerance degree :	+ 4.0

control lever	
position degree :	14.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.50

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 12.25
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.45
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 520
rack travel mm : 2.25
Tolerance mm : ± 0.15

Pressure hPa : 260
rack travel mm : 0.80
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80

Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 99.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1318
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113

Combination No. : 9 400 085 368

Injection pump
Pump designation : PES3A80D320RS1281
EP type number : 9 400 083 054

Governor
Governor design. : RSV350...900A7C627R
Governor no. : 9 420 083 264

Cust. part No. : 9.0520.05.3.8063

Customer-spec. information

Customer : MWM
Motor : D229.3
Power KW : 32.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 52.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 7.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 9.5

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 3.5

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 52.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 111.0

tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 940
rack travel mm : 9.20

Rated speed rpm : 969
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1100

Rated speed rpm : 941
rack travel mm : 9.20

Rated speed rpm : 970
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1100

Rated speed rpm : 942
rack travel mm : 9.20

Rated speed rpm : 971
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1100

Rated speed rpm : 943
rack travel mm : 9.20

Rated speed rpm : 972
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1100

Rated speed rpm : 944
rack travel mm : 9.20

Rated speed rpm : 973
Tolerance 1/min : ± 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1100
Rated speed rpm : 945
rack travel mm : 9.20
Rated speed rpm : 974
Tolerance 1/min : +- 4
rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 4.0
Setting point w/out bumper spring
Rated speed rpm : 350
rack travel mm : 5.50
Testing:
Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : +- 0.10
rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : +- 30
Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 10.25
Tolerance mm : +- 0.05
Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : +- 0.10
Rated speed rpm : 400
rack travel mm : 11.20
Tolerance mm : +- 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.40
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 strokes : +- 1.5
Check tolerance
cm3/1000S. : +- 3.5
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113

Combination No. : 9 400 085 369

Injection pump
Pump designation : PES4A80D32ORS1282
EP type number : 9 400 083 056

Governor
Governor design. : RSV350...900A7C627R
Governor no. : 9 420 083 264

Cust. part No. : 90520.05.4.8065

Customer-spec. information

Customer : MWM
Motor : D.229-4
Power KW : 34.3

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 52.0

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.0

Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 7.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 9.5

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 3.5

Spreed
Tolerance

cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 52.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spreed
Tolerance

cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 940
rack travel mm : 9.20

Rated speed rpm : 969
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 941
rack travel mm : 9.20

Rated speed rpm : 970
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 942
rack travel mm : 9.20

Rated speed rpm : 971
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 943
rack travel mm : 9.20

Rated speed rpm : 972
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 944
rack travel mm : 9.20

Rated speed rpm : 973
Tolerance 1/min : ± 4

rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1100
 Rated speed rpm : 945
 rack travel mm : 9.20
 Rated speed rpm : 974
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1100

LOW IDLE

control lever
 position degree : 79.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 5.50

Testing:

Rated speed rpm : 350
 rack travel mm : 6.00
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 450
 Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 10.25
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 rack travel mm : 10.30
 Tolerance mm : \pm 0.10

Rated speed rpm : 400
 rack travel mm : 11.20
 Tolerance mm : \pm 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.00
 Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
 rack travel mm : 7.40
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 9.5
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 3.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 370
Injection pump
Pump designation : PES6A80D320RS1271
EP type number : 9 400 083 058
Governor
Governor design. : RSV350...900A7C627R
Governor no. : 9 420 083 264
Cust. part No. : 9.0520.05.6.8063

Customer-spec. information
Customer : MWM
Motor : D229-6
Power KW : 61.9

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test Lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 10.25
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 7.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 9.5

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 3.5

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 52.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 940
rack travel mm : 9.20

Rated speed rpm : 969
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 941
rack travel mm : 9.20

Rated speed rpm : 970
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 942
rack travel mm : 9.20

Rated speed rpm : 971
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 943
rack travel mm : 9.20

Rated speed rpm : 972
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1100

Rated speed rpm : 944
rack travel mm : 9.20

Rated speed rpm : 973

Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

Rated speed rpm : 945
rack travel mm : 9.20

Rated speed rpm : 974
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 10.25
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 11.20
Tolerance mm : + 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.40
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 9.5
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000s. : + 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113

Combination No. : 9 400 085 372

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Governor
Governor design. : RQV300...1300AB1283L
Governor no. : 9 420 080 367

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 3.25
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 106.0

Tolerance
cm3/1000 strokes : +- 0.5

Check tolerance
cm3/1000S. : +- 2.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : ± 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 106.0
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 2.5

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : ± 4.0

control lever
 position degree : 109.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.60
 Rated speed rpm : 1360
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1505
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

control lever
 position degree : 19.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100
 CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.65
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.65
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.65
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 0.40
Tolerance mm : ± 0.10

Pressure hPa : 560
rack travel mm : 1.35
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 95.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000s. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 373
Injection pump
Pump designation : PES6A95D410RS2795
EP type number : 9 400 084 020
Governor
Governor design. : RSV350...1250A0C1169
: L
Governor no. : 9 420 083 296
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366
Power KW : 94.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

J21

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 8.65
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 63.5
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35

governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 63.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 110.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 7.60
 Rated speed rpm : 1295

Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1347
 Tolerance 1/min : ± 15
 rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 6.50

Testing:

Rated speed rpm : 350
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 475
 Tolerance 1/min : ± 30

Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 8.65
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 rack travel mm : 8.70
 Tolerance mm : ± 0.10

Rated speed rpm : 400
 rack travel mm : 10.10
 Tolerance mm : ± 0.30

BREAKAWAY

Rack travel in mm : 7.60
Rated speed rpm : 1295
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 101.5
Tolerance
cm³/1000 strokes : +- 7.5
Check tolerance
cm³/1000S. : +- 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 374
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RSV350...1250A0C1170
: L
Governor no. : 9 420 083 297
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 A
Power KW : 121.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 015
Outside diameter : 6.0

J24

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 9.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 82.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 103.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.60
 Rated speed rpm : 1295

Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1340
 Tolerance 1/min : ± 15
 rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 6.30

Testing:

Rated speed rpm : 350
 rack travel mm : 6.80
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 450
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 9.65
 Tolerance mm : ± 0.05

Rated speed rpm : 800
 rack travel mm : 9.65
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 rack travel mm : 9.70
 Tolerance mm : ± 0.10

Rated speed rpm : 400
 rack travel mm : 11.10
 Tolerance mm : ± 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 8.60
Rated speed rpm : 1295
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 375
Injection pump
Pump designation : PES6A95D410RS2812
EP type number : 9 400 084 028
Governor
Governor design. : RSV350...1250A8C808L
Governor no. : 9 420 083 298
Cust. part No. : 9.0520.05.6.9506

Customer-spec. information
Customer : MWM
Motor : 6.10 TCA
Power KW : 158.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.80
Tolerance mm : + 0.05
Check tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference
and maximum rack travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 13.35
Tolerance mm : + 0.05
Del. quantity cm³/1000 strokes : 119.5
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000s. : + 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 20.5
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35

governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 119.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : +- 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 107.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.30
 Rated speed rpm : 1305
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1360
 Tolerance 1/min : +- 15

rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 6.00

Testing:

Rated speed rpm : 350
 rack travel mm : 6.50
 Tolerance mm : +- 0.10

rack travel mm : 2.00
 Rated speed rpm : 435
 Tolerance 1/min : +- 30

Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 13.35
 Tolerance mm : +- 0.05

Rated speed rpm : 600
 rack travel mm : 13.35
 Tolerance mm : +- 0.05

Rated speed rpm : 400
 rack travel mm : 14.80

Tolerance mm : +- 0.30

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1305
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 156.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 376
Injection pump
Pump designation : PES4A95D32ORS2807
EP type number : 0 410 894 994
Governor
Governor design. : RSV375...1150A2C2282
: R
Governor no. : 9 420 083 302
Cust. part No. :

Customer-spec. information
Customer : VALMET
Motor : 420 DS
Power KW : 77.2

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test Lines : 1 680 750 014
Outside diameter : 6.0

K02

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.40
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 2- 4- 3
Phasing : 0-90-180-270
Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 12.25
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 101.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0
Speerd

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 101.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 51.0
tolerance degree : ± 4.0

K03

control lever
position degree : 101.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 1195
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1290
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

control lever
position degree : 25.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 5.10

Testing:

Rated speed rpm : 375
rack travel mm : 5.60
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 495
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 12.75

Tolerance mm : ± 0.05
Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 12.45
Tolerance mm : ± 0.05

Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 101.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed

K04

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 378
Injection pump
Pump designation : PES6A100D320/3RS2827
EP type number : 9 400 084 030
Governor
Governor design. : RSV400...900A7C2209
: -4R
Governor no. : 9 420 083 301
Cust. part No. : 3355291

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA 240
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

K05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference * CS : 4.00

BASIC SETTING

Rated speed rpm : 880
Rack travel in mm : 13.25
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 159.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0

<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	11.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spread	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S. :	9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	5.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	880
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	159.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	107.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	923
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	963
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	924
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	964
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	925
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	965
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	926
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	966
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100
<hr/>	
Rated speed rpm :	927
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	967
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85

Tolerance mm : +- 0.55
Rated speed rpm : 1100

Rated speed rpm : 928
rack travel mm : 12.20

Rated speed rpm : 968
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.50

Testing:

Rated speed rpm : 400
rack travel mm : 4.00
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 435
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 880
rack travel mm : 13.25
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : +- 0.10

Rated speed rpm : 350
rack travel mm : 14.40
Tolerance mm : +- 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm3/1000 strokes : 166.0
Tolerance
cm3/1000 strokes : +- 8.0
Check tolerance
cm3/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 378EE
Injection pump
Pump designation : PES6A100D320/3RS2827
EP type number : 9 400 084 030
Governor
Governor design. : RSV400...900A7C2209
: -4R
Governor no. : 9 420 083 301
Cust. part No. : 3355523-VERSA0-44

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA 240
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

K08

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 720
Rack travel in mm : 13.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	11.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Speed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	5.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	720
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	165.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	97.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	756
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	803
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	757
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	804
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	758
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	805
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	759
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	806
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	760
rack travel mm :	12.20
<hr/>	
Rated speed rpm :	807
Tolerance 1/min :	+ 4
rack travel mm :	4.00
<hr/>	
rack travel mm :	0.85

Tolerance mm : +- 0.55
Rated speed rpm : 900

Rated speed rpm : 761
rack travel mm : 12.20

Rated speed rpm : 808
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 900

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.50

Testing:

Rated speed rpm : 400
rack travel mm : 4.00
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 720
rack travel mm : 13.25
Tolerance mm : +- 0.05

Rated speed rpm : 550
rack travel mm : 13.30
Tolerance mm : +- 0.10

Rated speed rpm : 410
rack travel mm : 14.70
Tolerance mm : +- 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 379
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1277L
Governor no. : 9 420 080 355

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 10.55
Tolerance mm : ± 0.05
Del. quantity cm³/1000 strokes : 91.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 3.0
Speed Tolerance cm³/1000 strokes : 3.5
Check tolerance cm³/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : ± 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 800
 Del. quantity
 cm³/1000 strokes : 91.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 108.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.50
 Rated speed rpm : 1350
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 10.55
 Tolerance mm : ± 0.05

Rated speed rpm : 800
 rack travel mm : 11.25
 Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 11.00
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 11.45
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 1.20
Tolerance mm : ± 0.10

Pressure hPa : 310
rack travel mm : 0.45
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 89.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : 800
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 91.5

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1350
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 82.5
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 380
Injection pump
Pump designation : PES6A95D12ORS2834
EP type number : 9 400 084 032
Governor
Governor design. : RSV400...1250A8C2284
: R
Governor no. : 9 420 083 303
Cust. part No. : 3356006

Customer-spec. information
Customer : CUMMINS
Motor : 6BT
Power KW : 112.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

K15

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 11.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	11.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	93.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	111.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.60
Rated speed rpm :	1300
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1355
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1450

LOW IDLE

control lever	
position degree :	72.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	4.50

Testing:

Rated speed rpm :	400
rack travel mm :	5.00
Tolerance mm :	+ 0.10
<hr/>	
rack travel mm :	2.00
Rated speed rpm :	505
Tolerance 1/min :	+ 30
<hr/>	
Rated speed rpm :	100
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1250
rack travel mm :	11.65
Tolerance mm :	+ 0.05
<hr/>	
Rated speed rpm :	500
rack travel mm :	11.70
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	750
rack travel mm :	11.65

Tolerance mm : \pm 0.05
Rated speed rpm : 400
rack travel mm : 12.40
Tolerance mm : \pm 0.30

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 380FB
Injection pump
Pump designation : PES6A95D120RS2834
EP type number : 9 400 084 032
Governor
Governor design. : RSV400...1250A8C2284
: R
Governor no. : 9 420 083 303
Cust. part No. : 3356187-VERSA051

Customer-spec. information
Customer : CUMMINS
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

K18

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.80
Tolerance mm : +- 0.05
Check tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2- : 4
Phasing : 0-60-120-180-240 : -300

Beginning of delivery difference and maximum rack travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 10.75
Tolerance mm : +- 0.05
Del. quantity cm3/1000 strokes : 83.0
Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000S. : +- 3.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000S. :	8.0
<hr/>	
Del. quantity	
cm3/1000 strokes :	11.0
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S. :	9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
<hr/>	
governor spring	
pre-tension	
click setting x :	5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1150
Aneroid pressure	
hPa :	-
Del. quantity	
cm3/1000 strokes :	83.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	55.0
tolerance degree :	+ 4.0

control lever	
position degree :	105.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.70
Rated speed rpm :	1195
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1245
Tolerance 1/min :	+ 15

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

LOW IDLE

control lever	
position degree :	74.0
tolerance degree :	+ 4.0

control lever	
position degree :	24.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	450
rack travel mm :	4.40

Testing:

Rated speed rpm :	450
rack travel mm :	4.90
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	540
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	1150
rack travel mm :	10.75

Tolerance mm : ± 0.05
Rated speed rpm : 630
rack travel mm : 10.80
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 10.75
Tolerance mm : ± 0.05

Rated speed rpm : 400
rack travel mm : 11.70
Tolerance mm : ± 0.30

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.70
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 381
Injection pump
Pump designation : PES6A100D12ORS2868
EP type number : 9 400 084 037
Governor
Governor design. : RSV450...1200AOC2289
: R
Governor no. : 9 420 083 304
Cust. part No. : 3927763

Customer-spec. information
Customer : CUMMINS
Motor : 6BT
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

K21

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 8.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Del. quantity
cm³/1000 strokes : 23.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 7.70
Rated speed rpm : 1245
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 87.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 505
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 8.75
Tolerance mm : +- 0.05

Rated speed rpm : 650
rack travel mm : 9.05
Tolerance mm : +- 0.05

Rated speed rpm : 880
rack travel mm : 9.05

Tolerance mm : +- 0.05
Rated speed rpm : 1030
rack travel mm : 8.75
Tolerance mm : +- 0.05

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 7.70
Rated speed rpm : 1245
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 23.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113

Combination No. : 9 400 085 383

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Governor
Governor design. : RQV300...1300AB1066
: -13L
Governor no. : 9 420 080 332

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 LA-EURO 1
Power KW : 147.1

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

K24

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.45
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 104.0

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : ± 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 104.0
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 2.5

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : ± 4.0

control lever
 position degree : 109.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.60
 Rated speed rpm : 1360
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1505
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

control lever
 position degree : 19.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

Rated speed rpm : 100
 CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.45
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.45
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.45
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 0.40
Tolerance mm : ± 0.10

Pressure hPa : 560
rack travel mm : 1.35
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 384
Injection pump
Pump designation : PES4A95D410RS2887
EP type number : 9 400 084 040
Governor
Governor design. : RQV300...1300AB1307L
Governor no. : 9 420 080 385
Cust. part No. : 0260745402

Customer-spec. information
Customer : MBB
Motor : OM 364A/ EURO I
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.95
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 16.00
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 10.85
Tolerance mm : ± 0.05
Del. quantity cm3/1000 strokes : 85.0
Tolerance cm3/1000 strokes : ± 1.0
Check tolerance cm3/1000S. : ± 3.0
Speed Tolerance cm3/1000 strokes : 3.5
Check tolerance cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 9.0
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : +- 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 9.15
 Tolerance mm : +- 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : +- 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1440

Rack travel in mm : 16.50
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 85.0
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 3.0
 Spreed

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 61.0
 tolerance degree : +- 4.0

control lever
 position degree : 109.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.80
 Rated speed rpm : 1345
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1460
 Tolerance 1/min : +- 15

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1580

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : +- 4.0

control lever
 position degree : 21.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.00
 Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1300

rack travel mm : 10.85
Tolerance mm : +- 0.05

Rated speed rpm : 800
rack travel mm : 11.55
Tolerance mm : +- 0.05

Rated speed rpm : 950
rack travel mm : 11.15
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.55
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 0.35
Tolerance mm : +- 0.05

Pressure hPa : 350
rack travel mm : 0.70
Tolerance mm : +- 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 82.5
Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 58.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1345
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.30
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 83.0
Tolerance
cm3/1000 strokes : +- 7.5
Check tolerance
cm3/1000S. : +- 10.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 9.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96
Test oil : ISO 4113
Combination No. : 9 400 030 752
Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214
Governor
Governor design. : RSV475...1100A0C867R
Governor no. : F 002 A20 203

Cust. part No. : 3930151

Customer-spec. information
Customer : CUMMINS
Motor : 4BT
Power KW : 66.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

L02

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-240

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 92.8

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : ± 0.20
governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 92.8
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 105.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1145
Tolerance 1/min : ± 5

L03

rack travel mm : 4.00
Rated speed rpm : 1250

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1260

LOW IDLE

control lever
position degree : 87.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 6.35

Testing:

Rated speed rpm : 475
rack travel mm : 6.85
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.50
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.15
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 99.6
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 0 402 076 779
Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780
Governor
Governor design. : RSV400...900P4A611
Governor no. : 0 421 833 489

Cust. part No. : RE63767

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 457 413 010
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery mark
°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1
Beginning of delivery difference
and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 13.90
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 219.5

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 3.0

Spread
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Del. quantity
cm3/1000 strokes : 25.5

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 5.0

Spread
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 219.5

Tolerance
cm3/1000 strokes : +- 1.0

L06

Check tolerance
cm3/1000S. : +- 3.0
Spread
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.90
Rated speed rpm : 910
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 950
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1020

rack travel mm : 4.00
Rated speed rpm : 970

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.65

Testing:

Rated speed rpm : 400
rack travel mm : 5.15
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 13.90
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 910
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 25.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 0 402 076 780
Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780
Governor
Governor design. : RSV400...900P4A606
Governor no. : 0 421 833 490
Cust. part No. : RE62644

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 457 413 010
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

L08

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery mark
°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1
Beginning of delivery difference
and maximum rack
travel : 14.00
Difference °CS : 2.50

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 13.90
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 219.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Del. quantity
cm³/1000 strokes : 25.5

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 219.5
Tolerance
cm³/1000 strokes : +- 1.0

L09

Check tolerance
cm³/1000S. : +- 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.90
Rated speed rpm : 910
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 950
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1020

rack travel mm : 4.00
Rated speed rpm : 970

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.65

Testing:

Rated speed rpm : 400
rack travel mm : 5.15
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 13.90
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check speed 1/min : > 80

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 910
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 25.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 0 402 736 865
Injection pump
Pump designation : PES6P120A120RS7349
EP type number : 0 412 726 920
Governor
Governor design. : RQV400...1150PA1170K
Governor no. : 0 421 815 436

Cust. part No. : 3928148

Customer-spec. information

Customer : CDC
Motor : 6BTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 086
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery blocking
°NW after s.o.d. : 6.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	177.5
<hr/>		
Tolerance cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	+ 4.0
<hr/>		
Spread Tolerance cm ³ /1000 strokes	:	8.0
<hr/>		
Check tolerance cm ³ /1000S.	:	12.0
<hr/>		
Del. quantity cm ³ /1000 strokes	:	15.0
Tolerance cm ³ /1000 strokes	:	+ 3.0
Check tolerance cm ³ /1000S.	:	+ 5.0
Spread Tolerance cm ³ /1000 strokes	:	4.0
Check tolerance cm ³ /1000S.	:	8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1150
Aneroid pressure hPa	:	1200
Del. quantity cm ³ /1000 strokes	:	177.5
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 4.0
Spread Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

CONTROL LEVER

control lever position degree	:	118.0
tolerance degree	:	+ 6.0

RATED SPEED

L12

rack travel mm	:	13.10
Rated speed rpm	:	1315
Tolerance 1/min	:	+ 15
<hr/>		
rack travel mm	:	4.00
Rated speed rpm	:	1480
Tolerance 1/min	:	+ 5
<hr/>		
rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	1600

LOW IDLE

control lever position degree	:	72.0
tolerance degree	:	+ 6.0

Testing:

Rated speed rpm	:	420
rack travel mm	:	5.80
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	300
CRT mm min.	:	> 8.80
<hr/>		
Rated speed rpm	:	420

TORQUE CONTROL

Rated speed rpm	:	1150
rack travel mm	:	14.35
Tolerance mm	:	+ 0.05
<hr/>		
Rated speed rpm	:	800
rack travel mm	:	12.60
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	1250
rack travel mm	:	14.20
Tolerance mm	:	+ 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm	:	1150
Pressure hPa	:	1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 10.30
Tolerance mm : + 0.20

Rated speed rpm : 1150

Pressure hPa : 685
rack travel mm : 13.40
Tolerance mm : + 0.30

Pressure hPa : 425
rack travel mm : 11.45
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 315

Check
speed 1/min : > 80
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 96.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.10

L13

Rated speed rpm : 1315
Tolerance 1/min : + 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113

Combination No. : 0 402 736 867

Injection pump
Pump designation : PES6P120A120RS7350
EP type number : 0 412 726 921

Governor
Governor design. : RQV400...1150PA1172K
Governor no. : 0 421 815 438

Cust. part No. : 3928147

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 142.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 103

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.75
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.0

tolerance degree : +- 6.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 1310

Tolerance 1/min : +- 15

rack travel mm : 4.00

Rated speed rpm : 1475

Tolerance 1/min : +- 5

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0

tolerance degree : +- 6.0

Testing:

Rated speed rpm : 420

rack travel mm : 6.50

Tolerance mm : +- 0.20

Rated speed rpm : 300

CRT mm min. : > 8.90

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 14.35

Tolerance mm : +- 0.05

Rated speed rpm : 800

rack travel mm : 12.90

Tolerance mm : +- 0.20

Rated speed rpm : 1250

rack travel mm : 14.20

Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150

Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 11.50
Tolerance mm : +- 0.20

Rated speed rpm : 1150

Pressure hPa : 500
rack travel mm : 13.40
Tolerance mm : +- 0.30

Pressure hPa : 375
rack travel mm : 12.30
Tolerance mm : +- 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 315

Check
speed 1/min : > 80
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 13.00

L16

Rated speed rpm : 1310
Tolerance 1/min : +- 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.96
Test oil : ISO 4113
Combination No. : 0 402 736 906
Injection pump
Pump designation : PES6P120A120RS7416
EP type number : 0 412 726 959
Governor
Governor design. : RQV400...1250PA1060
 : -4K
Governor no. : 0 421 815 514
Cust. part No. : 3928146

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power kW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 2 417 413 086
Inlet press. bar : 2.0
Tolerance bar : +- 0.1
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0
Prestroke mm : 3.60
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75
Start of delivery blocking
°NW after s.o.d. : 6.25
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 13.65
Tolerance mm : +- 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 160.5
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 12.0
<hr/>	
Rated speed rpm	: 420
<hr/>	
Rack travel in mm	: 6.00
Tolerance mm	: ± 0.20
Del. quantity	
cm ³ /1000 strokes	: 15.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 5.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 400
guide sleeve	
travel mm	: 1.44
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 1329
guide sleeve	
travel mm	: 7.83
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 939
guide sleeve	
travel mm	: 5.18
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 640
guide sleeve	
travel mm	: 3.56
Tolerance mm	: ± 0.25

Rated speed rpm	: 1690
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1390
Rack travel in mm	: 12.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm ³ /1000 strokes	: 160.5
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever	
position degree	: 117.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 12.60
Rated speed rpm	: 1325
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1475
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1550

LOW IDLE

control lever	
position degree	: 71.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 300
CRT mm min. : > 5.80
Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.85
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 10.60
Tolerance mm : ± 0.20

Rated speed rpm : 1250
Pressure hPa : 375
rack travel mm : 12.70
Tolerance mm : ± 0.30

Pressure hPa : 260
rack travel mm : 11.60
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 280

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 131.5
Tolerance cm³/1000 strokes : ± 3.0
Check tolerance cm³/1000S. : ± 6.0
Spreed Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 111.5
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1325
Tolerance 1/min : ± 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.10
Tolerance mm : ± 0.50
Del. quantity cm³/1000 strokes : 155.0
Tolerance cm³/1000 strokes : ± 20.0
Check tolerance cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1400PA1279K
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.85
Tolerance mm : + 0.05

Del. quantity cm ³ /1000 strokes	:	198.5
<hr/>		
Tolerance cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	+ 4.0
<hr/>		
Spreed Tolerance cm ³ /1000 strokes	:	5.0
<hr/>		
Check tolerance cm ³ /1000S.	:	9.0
<hr/>		
Del. quantity cm ³ /1000 strokes	:	34.0
Tolerance cm ³ /1000 strokes	:	+ 3.0
Check tolerance cm ³ /1000S.	:	+ 5.0
<hr/>		
Spreed Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm guide sleeve travel mm	:	275 1.39
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm guide sleeve travel mm	:	1455 9.16
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm guide sleeve travel mm	:	931 5.67
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm guide sleeve travel mm	:	480 3.18
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm guide sleeve travel mm	:	1860 13.50
Tolerance mm	:	+ 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1400
Aneroid pressure hPa	:	1200
Del. quantity cm ³ /1000 strokes	:	198.5
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 4.0
<hr/>		
Spreed Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

CONTROL LEVER

control lever position degree	:	118.5
tolerance degree	:	+ 4.0

RATED SPEED

rack travel mm	:	12.80
Rated speed rpm	:	1450
Tolerance 1/min	:	+ 5
<hr/>		
rack travel mm	:	6.00
Rated speed rpm	:	1585
Tolerance 1/min	:	+ 15
<hr/>		
rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	1700

LOW IDLE

control lever position degree	:	74.5
tolerance degree	:	+ 4.0

Testing:

Rated speed rpm	:	275
rack travel mm	:	7.30
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	200
CRT mm min.	:	> 8.80

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 13.85
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 13.60
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 13.15
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1400
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1400
rack travel mm : 10.30
Tolerance mm : ± 0.20

Rated speed rpm : 1400
Pressure hPa : 620
rack travel mm : 12.70
Tolerance mm : ± 0.20

Pressure hPa : 280
rack travel mm : 11.20
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 188.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.80

Rated speed rpm : 1450

Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 21.00

Tolerance mm : ± 0.50

Del. quantity
cm³/1000 strokes : 175.0

Tolerance
cm³/1000 strokes : ± 20.0

Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 34.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.95
Test oil : ISO 4113
Combination No. : 0 402 746 648
Injection pump
Pump designation : PES6P120A320RS7363
EP type number : 0 412 726 931
Governor
Governor design. : RQV325...1000PA1203
 : -1K
Governor no. : 0 421 815 46
Cust. part No. : 313GC5216-P2

Customer-spec. information
Customer : MACK
Motor : EM5260
Power KW : 195.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 084
Inlet press. bar : 3.0
Tolerance bar : + 0.1
Test nozzle holde
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0
Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 12.80
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 254.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 43.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.53
Tolerance mm : ± 0.25

Rated speed rpm : 1056
guide sleeve
travel mm : 9.06
Tolerance mm : ± 0.25

Rated speed rpm : 898
guide sleeve
travel mm : 7.74
Tolerance mm : ± 0.25

Rated speed rpm : 371
guide sleeve
travel mm : 2.23
Tolerance mm : ± 0.25

Rated speed rpm : 421
guide sleeve
travel mm : 2.85
Tolerance mm : ± 0.25

Rated speed rpm : 610
guide sleeve
travel mm : 4.40
Tolerance mm : ± 0.25

Rated speed rpm : 1440
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 254.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 115.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1050
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 63.5
tolerance degree : ± 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 275

CRT mm min. : > 5.50

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : ± 0.05

Rated speed rpm : 575
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 13.60
Tolerance mm : ± 0.10

Rated speed rpm : 450
rack travel mm : 11.90
Tolerance mm : ± 0.40

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 8.50
Tolerance mm : ± 0.20

Rated speed rpm : 800

Pressure hPa : 755
rack travel mm : 12.40
Tolerance mm : ± 0.20

Pressure hPa : 405
rack travel mm : 9.80
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 575
Del. quantity
cm³/1000 strokes : 296.5

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 154.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1050
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 194.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 30.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 43.5
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 0 402 616 806
Injection pump
Pump designation : PE6P120A300LS7888
EP type number : 0 412 626 947
Governor
Governor design. :
Governor no. :
Cust. part No. : 04221425KZ0165-17

Customer-spec. information
Customer : KHD
Motor : BF6M1015C
Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holder assembly : 1 688 901 105
Opening pressure bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

M01

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 4.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 0.50
Firing order : 1- 6- 3- 5- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 13.70
Tolerance mm : + 0.05
Del. quantity cm³/1000 strokes : 350.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.70
 Tolerance mm : + 0.20

Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 350.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

TORQUE CONTROL

Rated speed rpm : 950
 rack travel mm : 13.70
 Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.00
 Del. quantity
 cm³/1000 strokes : 200.0
 Tolerance
 cm³/1000 strokes : + 20.0
 Check tolerance
 cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
 rack travel mm : 4.70
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113

Combination No. : 0 402 646 744

Injection pump
Pump designation : PE6P120A320LS7872
EP type number : 0 412 626 912

Governor
Governor design. : RQV300...1050PA1259
Governor no. : 0 421 814 169

Cust. part No. : 04221532 KY 0165-17

Customer-spec. information
Customer : KHD
Motor : BF6M1015C
Power KW : 270.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 195
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

M03

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 328.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.24
Tolerance mm : ± 0.20

Rated speed rpm : 1098
guide sleeve
travel mm : 10.02
Tolerance mm : ± 0.15

Rated speed rpm : 860
guide sleeve
travel mm : 5.59
Tolerance mm : ± 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.24
Tolerance mm : ± 0.25

Rated speed rpm : 1154
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1230
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1130
Rack travel in mm : 12.70
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1700
Del. quantity
cm³/1000 strokes : 328.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.20
Rated speed rpm : 1085
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1280

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 6.10

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.20
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1700
rack travel mm : 13.20
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.30
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 450
rack travel mm : 9.20
Tolerance mm : ± 0.10

Pressure hPa : 1000
rack travel mm : 12.00
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

M05

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 1085
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113

Combination No. : 0 402 646 746

Injection pump
Pump designation : PE6P120A320LS7872
EP type number : 0 412 626 912

Governor
Governor design. : RQV300...950PA1238
Governor no. : 0 421 814 156

Cust. part No. : 04222809KY0165-17

Customer-spec. information
Customer : KHD
Motor : BF6M1015C
Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

M07

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.20
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 358.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.13
 Tolerance mm : + 0.20

Rated speed rpm : 994
 guide sleeve
 travel mm : 10.08
 Tolerance mm : + 0.15

Rated speed rpm : 700
 guide sleeve
 travel mm : 5.10
 Tolerance mm : + 0.25

Rated speed rpm : 1160
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1035

Rack travel in mm : 13.20
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1700
 Del. quantity
 cm³/1000 strokes : 358.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 123.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.20
 Rated speed rpm : 980
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1055
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 77.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.00
 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1700
rack travel mm : 14.20
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.90
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 385
rack travel mm : 9.70
Tolerance mm : ± 0.20

Pressure hPa : 1000
rack travel mm : 13.00
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 230.0
Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 4.0
Spreed Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 980
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Del. quantity cm³/1000 strokes : 230.0
Tolerance cm³/1000 strokes : ± 20.0
Check tolerance cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.20
Del. quantity cm³/1000 strokes : 23.0
Tolerance cm³/1000 strokes : ± 3.0
Check tolerance cm³/1000S. : ± 6.0
Spreed Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.96
Test oil : ISO 4113
Combination No. : 0 402 646 909
Injection pump
Pump designation : PE6P120A32ORS7138
 : -10Z
EP type number : 0 412 626 923
Governor
Governor design. : RQV200...1100PA712
 : -5
Governor no. : 0 421 813 951
Cust. part No. : 1318819

Customer-spec. information
Customer : SCANIA
Motor : DSC907

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Vibration damper
(RoBo diaphragm) : 4.2
Test oil inlet temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 2.5
Tolerance bar : +- 0.1
Test nozzle holder assembly : 1 688 901 104
Opening pressure bar : 251.5
Tolerance bar : +- 1.5

M10

Test Lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 4.45
Tolerance mm : +- 0.05
Check tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : +- 0.30
Check tolerance °NW : +- 0.50
Start of delivery mark
Tolerance : +- 0.50
Check tolerance °NW : +- 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.15
Tolerance mm : +- 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	159.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes :	8.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 12.0
<hr/>	
Rated speed rpm :	250
<hr/>	
Rack travel in mm :	5.00
Tolerance mm :	+ 0.30
Del. quantity	
cm ³ /1000 strokes :	16.0
Tolerance	
cm ³ /1000 strokes :	+ 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Spread	
Tolerance	
cm ³ /1000 strokes :	4.0
Check tolerance	
cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	1130
<hr/>	
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	700
Aneroid pressure	
hPa :	1500
Del. quantity	
cm ³ /1000 strokes :	159.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spread	

Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever	
position degree :	60.0
tolerance degree :	+ 4.0

control lever	
position degree :	120.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.15
Rated speed rpm :	1145
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1285
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1400

LOW IDLE

control lever	
position degree :	64.0
tolerance degree :	+ 4.0

control lever	
position degree :	9.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	250
rack travel mm :	5.00
Tolerance mm :	+ 0.10

Rated speed rpm :	150
CRT mm min. :	> 6.50

Rated speed rpm :	250
-------------------	-----

TORQUE CONTROL

Rated speed rpm :	700
-------------------	-----

rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 12.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : 10.75
Tolerance mm : ± 0.15

Pressure hPa : 350
rack travel mm : 11.55
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

M12

BREAKAWAY

Rack travel in mm : 11.15
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 5.00
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113

Combination No. : 0 402 648 789

Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880

Governor
Governor design. : RQV300...1050PA1259
Governor no. : 0 421 814 169

Cust. part No. : 04222488KY0165-17

Customer-spec. information

Customer : KHD
Motor : BF8M1015/C
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

M13

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
: - 5- 4- 3

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 340.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : +- 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.24
Tolerance mm : +- 0.20

Rated speed rpm : 1103
guide sleeve
travel mm : 10.19
Tolerance mm : +- 0.15

Rated speed rpm : 860
guide sleeve
travel mm : 5.59
Tolerance mm : +- 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.24
Tolerance mm : +- 0.25

Rated speed rpm : 1154
guide sleeve
travel mm : 12.00
Tolerance mm : +- 0.25

Rated speed rpm : 1230
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1118

Rack travel in mm : 13.00
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1700

Del. quantity
cm³/1000 strokes : 340.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 1090
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1290

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm max. : > 7.00

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.00
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1600
rack travel mm : 14.00
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.40
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 570
rack travel mm : 10.50
Tolerance mm : ± 0.10

Pressure hPa : 1100
rack travel mm : 13.00
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

M15

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1090
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 0 402 648 793
Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880
Governor
Governor design. : RQ300/1050PA1268
Governor no. : 0 421 801 802
Cust. part No. : 04223118KY0165-17

Customer-spec. information
Customer : KHD
Motor : BF8M1015/C
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Overflow quantity
min. L/h : 160
Tolerance L/h : ± 20.0
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 5- 4- 3

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 340.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.66
Tolerance mm : ± 0.20

Rated speed rpm : 1106
guide sleeve
travel mm : 6.53
Tolerance mm : ± 0.15

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 458
guide sleeve
travel mm : 4.21
Tolerance mm : ± 0.10

Rated speed rpm : 580

guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1290
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700
Rack travel in mm : 11.20
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 340.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.60
Rated speed rpm : 1100
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 415
Tolerance 1/min : ± 20

Rated speed rpm : 200
CRT mm min. : > 6.20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.60
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1600
rack travel mm : 14.60
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.40
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 570
rack travel mm : 11.10
Tolerance mm : ± 0.20

Pressure hPa : 1100
rack travel mm : 13.60
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100

M18

Rated speed rpm : < 220
Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.60
Rated speed rpm : 1100
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.40
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 0 402 648 795
Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880
Governor
Governor design. : RQV300...1050PA1258K
Governor no. : 0 421 815 490
Cust. part No. : 04223330KY0165-17

Customer-spec. information
Customer : KHD
Motor : BF8M1015/C
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity min. l/h : 115
Tolerance l/h : ± 10.0
Test nozzle holder assembly : 1 688 901 105
Opening pressure bar : 208.5
Tolerance bar : ± 1.5

M20

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 8- 7- 2- 6
 : - 5- 4- 3
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50
Start of delivery mark
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050
Rack travel in mm : 14.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 360.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.60
Tolerance mm : ± 0.20

Rated speed rpm : 1097
guide sleeve
travel mm : 10.07
Tolerance mm : ± 0.15

Rated speed rpm : 796
guide sleeve
travel mm : 6.87
Tolerance mm : ± 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 4.02
Tolerance mm : ± 0.25

Rated speed rpm : 1340

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1175

Rack travel in mm : 13.70
Tolerance mm : ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 360.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.70
Rated speed rpm : 1085
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm max. : > 6.30

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.70
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.00
Tolerance mm : ± 0.25

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : ± 0.25

Rated speed rpm : 450
rack travel mm : 11.40
Tolerance mm : ± 0.25

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1000
rack travel mm : 14.70
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1050
rack travel mm : 8.90
Tolerance mm : ± 0.20

Rated speed rpm : 1050

Pressure hPa : 500
rack travel mm : 11.95
Tolerance mm : ± 0.10

Pressure hPa : 800
rack travel mm : 14.10
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.70
Rated speed rpm : 1085
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113
Combination No. : 0 402 648 797
Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880
Governor
Governor design. : RQ750PA1231
Governor no. : 0 421 801 791
Cust. part No. : 04222112KY0165-17

Customer-spec. information
Customer : KHD
Motor : BF8M1015/C
Power kW : 318.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder assembly : 1 688 901 105
Opening pressure bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

M24

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 8- 7- 2- 6
 : - 5- 4- 3
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check tolerance *NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity cm³/1000 strokes : 365.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	5.0
<hr/>	
Check tolerance	
cm3/1000S. :	9.0
<hr/>	
Rated speed rpm :	300
<hr/>	
Rack travel in mm :	4.70
Tolerance mm :	+ 0.20
Del. quantity	
cm3/1000 strokes :	20.0
Tolerance	
cm3/1000 strokes :	+ 3.0
Check tolerance	
cm3/1000S. :	+ 6.0
Spreed	
Tolerance	
cm3/1000 strokes :	8.0
Check tolerance	
cm3/1000S. :	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	768
guide sleeve	
travel mm :	6.28
Tolerance mm :	+ 0.15
<hr/>	
Rated speed rpm :	610
guide sleeve	
travel mm :	0.52
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	900
guide sleeve	
travel mm :	14.60
Tolerance mm :	+ 0.15
<hr/>	
Rated speed rpm :	866
guide sleeve	
travel mm :	12.00
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	930
guide sleeve	
travel mm :	13.50
Tolerance mm :	+ 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	700
-------------------	-----

Aneroid pressure	
hPa :	-
Del. quantity	
cm3/1000 strokes :	365.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 4.0
Spreed	
Tolerance	
cm3/1000 strokes :	5.0
Check tolerance	
cm3/1000S. :	9.0

CONTROL LEVER

control lever	
position degree :	109.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	750
rack travel mm :	12.30
<hr/>	
Rated speed rpm :	780
Tolerance 1/min :	+ 4
rack travel mm :	5.50
<hr/>	
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	900
<hr/>	
Rated speed rpm :	751
rack travel mm :	12.30
<hr/>	
Rated speed rpm :	781
Tolerance 1/min :	+ 4
rack travel mm :	5.50
<hr/>	
rack travel mm :	0.50
Tolerance mm :	+ 0.50
<hr/>	
Rated speed rpm :	752
rack travel mm :	12.30
<hr/>	
Rated speed rpm :	782
Tolerance 1/min :	+ 4
rack travel mm :	5.50
<hr/>	
rack travel mm :	0.50
Tolerance mm :	+ 0.50

Rated speed rpm : 900
 Rated speed rpm : 753
 rack travel mm : 12.30
 Rated speed rpm : 783
 Tolerance 1/min : +- 4
 rack travel mm : 5.50
 rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 754
 rack travel mm : 12.30
 Rated speed rpm : 784
 Tolerance 1/min : +- 4
 rack travel mm : 5.50
 rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 900
 Rated speed rpm : 755
 rack travel mm : 12.30
 Rated speed rpm : 785
 Tolerance 1/min : +- 4
 rack travel mm : 5.50
 rack travel mm : 0.50
 Tolerance mm : +- 0.50

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 13.30
 Tolerance mm : +- 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 560
 Check speed 1/min : > 80
 Check speed 1/min : < 580

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.25
 Tolerance mm : +- 0.75
 Del. quantity cm³/1000 strokes : 205.0
 Tolerance cm³/1000 strokes : +- 20.0
 Check tolerance cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 300
 rack travel mm : 4.70
 Tolerance mm : +- 0.20
 Del. quantity cm³/1000 strokes : 20.0
 Tolerance cm³/1000 strokes : +- 3.0
 Check tolerance cm³/1000S. : +- 6.0
 Spreed cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.96
Test oil : ISO 4113
Combination No. : 0 402 736 885
Injection pump
Pump designation : PES6P120A120RS7370
EP type number : 0 412 726 934
Governor
Governor design. : RQV400...1250PA1212K
Governor no. : 0 421 815 462

Cust. part No. : 3931599

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 131.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 086
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 015
Outside diameter : 6.0

M27

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 13.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Del. quantity
cm³/1000 strokes : 19.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1330

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1700

LOW IDLE

Testing:

Rated speed rpm : 420

rack travel mm : 6.20

Tolerance mm : ± 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 13.85

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 11.80

Tolerance mm : ± 0.10

Rated speed rpm : 1000

rack travel mm : 12.50

Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250

Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 1250

rack travel mm : 9.40

Tolerance mm : ± 0.20

Rated speed rpm : 1250

Pressure hPa : 440

rack travel mm : 12.55

Tolerance mm : ± 0.30

Pressure hPa : 265

rack travel mm : 10.80

Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100

Rated speed rpm : < 315

Check
speed 1/min : > 80

Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 123.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1330
Tolerance 1/min : ± 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.70
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 382
Injection pump
Pump designation : PES6A100D12ORS2869
EP type number : 9 400 084 038
Governor
Governor design. : RQV350...1100AB1303R
Governor no. : 9 420 080 381
Cust. part No. : 3356052

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA 215 hp
Power KW : 159.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

N02

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference and maximum rack travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 145.5

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 3.0

<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	17.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spread	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S. :	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1050
guide sleeve	
travel mm :	5.90
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	850
guide sleeve	
travel mm :	4.75
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	350
guide sleeve	
travel mm :	1.45
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	600
guide sleeve	
travel mm :	3.65
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1350
guide sleeve	
travel mm :	8.35
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1360
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

N03

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	1100
Del. quantity	
cm ³ /1000 strokes :	145.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	55.0
tolerance degree :	+ 4.0

control lever	
position degree :	110.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.70
Rated speed rpm :	1170
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1350
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1500

LOW IDLE

control lever	
position degree :	68.0
tolerance degree :	+ 4.0

control lever	
position degree :	13.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.75
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 690
rack travel mm : 2.25
Tolerance mm : ± 0.15

Pressure hPa : 300
rack travel mm : 0.70
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1170
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance : 9.0
cm³/1000s.

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.96
Test oil : ISO 4113

Combination No. : 9 400 085 386

Injection pump
Pump designation : PES6A95D410RS2812
EP type number : 9 400 084 028

Governor
Governor design. : RQV350...1300AB1304L
Governor no. : 9 420 080 382

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : 6.10 T
Power KW : 124.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N06

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 2.80
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 91.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000S.	: 8.0
<hr/>	
Del. quantity	
cm3/1000 strokes :	12.5
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S.	: + 4.5
<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1350
guide sleeve	
travel mm :	7.20
Tolerance mm :	+ 0.10

Rated speed rpm :	800
guide sleeve	
travel mm :	3.95
Tolerance mm :	+ 0.25

Rated speed rpm :	300
guide sleeve	
travel mm :	1.05
Tolerance mm :	+ 0.25

Rated speed rpm :	550
guide sleeve	
travel mm :	2.75
Tolerance mm :	+ 0.25

Rated speed rpm :	1500
guide sleeve	
travel mm :	8.55
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1485
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1300
Aneroid pressure	
hPa :	900
Del. quantity	
cm3/1000 strokes :	91.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S.	: + 3.0
<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	58.0
tolerance degree :	+ 4.0

control lever	
position degree :	113.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.60
Rated speed rpm :	1418
Tolerance 1/min :	+ 8

rack travel mm :	4.00
Rated speed rpm :	1550
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1700

LOW IDLE

control lever	
position degree :	69.0
tolerance degree :	+ 4.0

control lever	
position degree :	13.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.80
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 8.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.65
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 880
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 1260
rack travel mm : 11.65
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.05
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 1.75
Tolerance mm : ± 0.15

Pressure hPa : 270
rack travel mm : 0.60
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100

NO8

Rated speed rpm : < 270

Check
speed 1/min : > 80

Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 93.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 51.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1418
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00

Del. quantity
cm³/1000 strokes : 155.0

Tolerance
cm³/1000 strokes : ± 8.0

Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.5

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 387
Injection pump
Pump designation : PES6A100b320/3RS2691
: -2
EP type number : 9 410 230 028
Governor
Governor design. : RQV450...1150AB1305R
Governor no. : 9 420 080 383
Cust. part No. : 3355883

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT - 8.3 L
Power KW : 126.8

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

N10

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 10.45
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 92.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 3.0

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	11.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1150
guide sleeve	
travel mm :	7.50
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	900
guide sleeve	
travel mm :	5.65
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	400
guide sleeve	
travel mm :	1.85
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	650
guide sleeve	
travel mm :	4.35
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1300
guide sleeve	
travel mm :	8.95
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1245
<hr/>	
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1150
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	92.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	58.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	113.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.40
Rated speed rpm :	1195
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1300
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1450

LOW IDLE

control lever	
position degree :	72.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	16.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 11.00
Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 10.45
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 10.75
Tolerance mm : ± 0.05

Rated speed rpm : 850
rack travel mm : 10.75
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 10.45
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 300

Check speed 1/min : > 80
Check speed 1/min : < 320

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.40
Rated speed rpm : 1195

Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 387EF
Injection pump
Pump designation : PES6A100D320/3RS2691
: -2
EP type number : 9 410 230 028
Governor
Governor design. : RQV450...1150AB1305R
Governor no. : 9 420 080 383
Cust. part No. : 3355882

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT - 8.3 L
Power KW : 111.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

N13

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 10.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 99.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	11.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spread	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S. :	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1150
guide sleeve	
travel mm :	7.50
Tolerance mm :	+ 0.10

Rated speed rpm :	900
guide sleeve	
travel mm :	5.65
Tolerance mm :	+ 0.25

Rated speed rpm :	400
guide sleeve	
travel mm :	1.85
Tolerance mm :	+ 0.25

Rated speed rpm :	650
guide sleeve	
travel mm :	4.35
Tolerance mm :	+ 0.25

Rated speed rpm :	1300
guide sleeve	
travel mm :	8.95
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1245
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1150
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	99.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	58.0
tolerance degree :	+ 4.0

control lever	
position degree :	113.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.80
Rated speed rpm :	1195
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1310
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1450

LOW IDLE

control lever	
position degree :	72.0
tolerance degree :	+ 4.0

control lever	
position degree :	17.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 11.00

Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 10.85
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 10.85
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 370

Check
speed 1/min : > 80
Check
speed 1/min : < 390

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 89.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 3.8

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00

N15

Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000s. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	11.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1150
guide sleeve	
travel mm :	7.50
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	900
guide sleeve	
travel mm :	5.65
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	400
guide sleeve	
travel mm :	1.85
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	650
guide sleeve	
travel mm :	4.35
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1300
guide sleeve	
travel mm :	8.95
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1245
<hr/>	
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1150
Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	107.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	58.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	113.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.30
Rated speed rpm :	1195
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1315
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1450

LOW IDLE

control lever	
position degree :	72.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	17.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : +- 0.10

Rated speed rpm : 100
CRT mm min. : > 11.00

Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 11.35
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 12.05
Tolerance mm : +- 0.05

Rated speed rpm : 850
rack travel mm : 11.85
Tolerance mm : +- 0.05

Rated speed rpm : 950
rack travel mm : 11.55
Tolerance mm : +- 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 370

Check speed 1/min : > 80
Check speed 1/min : < 390

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 115.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 10.30
Rated speed rpm : 1195

N18

Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm3/1000 strokes : 164.0
Tolerance
cm3/1000 strokes : +- 8.0
Check tolerance
cm3/1000S. : +- 11.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 11.5
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 389
Injection pump
Pump designation : PES6A95D410RS2812
EP type number : 9 400 084 028
Governor
Governor design. : RQV350...1300AB1309L
Governor no. : 9 420 080 386

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : 6.10 TCA
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 99.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0

<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S.	: 8.0
<hr/>	
Del. quantity	
cm ³ /1000 strokes :	13.0
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Speed	
Tolerance	
cm ³ /1000 strokes :	5.5
Check tolerance	
cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1350
guide sleeve	
travel mm :	7.20
Tolerance mm :	+ 0.10

Rated speed rpm :	800
guide sleeve	
travel mm :	3.95
Tolerance mm :	+ 0.25

Rated speed rpm :	300
guide sleeve	
travel mm :	1.05
Tolerance mm :	+ 0.25

Rated speed rpm :	550
guide sleeve	
travel mm :	2.75
Tolerance mm :	+ 0.25

Rated speed rpm :	1500
guide sleeve	
travel mm :	8.55
Tolerance mm :	+ 0.25

GUIDE SLEEVE POSITION

Rated speed rpm :	1490
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1300
Aneroid pressure	
hPa :	900
Del. quantity	
cm ³ /1000 strokes :	99.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Speed	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S.	: 8.0

CONTROL LEVER

control lever	
position degree :	59.0
tolerance degree :	+ 4.0

control lever	
position degree :	114.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.90
Rated speed rpm :	1425
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1560
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1730

LOW IDLE

control lever	
position degree :	69.0
tolerance degree :	+ 4.0

control lever	
position degree :	13.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.80
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 8.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.95
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.95
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.95
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 380
rack travel mm : 1.80
Tolerance mm : ± 0.10

Pressure hPa : 190
rack travel mm : 0.55
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 51.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1425
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.96
Test oil : ISO 4113
Combination No. : 9 400 085 390
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1310L
Governor no. : 9 420 080 388

Cust. part No. : 0260746902

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 3.00
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.85
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 95.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 3.0

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : +- 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : +- 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : +- 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 95.0
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 61.0
 tolerance degree : +- 4.0

control lever
 position degree : 109.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.80
 Rated speed rpm : 1385
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1530
 Tolerance 1/min : +- 15

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : +- 4.0

control lever
 position degree : 22.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.30
 Tolerance mm : +- 0.10

Rated speed rpm : 100
 CRT mm min. : > 9.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 1125
rack travel mm : 11.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : 0.50
Tolerance mm : ± 0.10

Pressure hPa : 350
rack travel mm : 1.45
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1385
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

